

Semi-Annual Environmental Monitoring Report

Project Number: 53178-001

Semestral Report (July – December 2024)

January 2025

Georgia: East-West Highway (Shorapani – Argveta Section) Improvement Project

Prepared by the Roads Department of the Ministry of Regional Development and Infrastructure of Georgia for the Asian Development Bank.

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of Asian Development Bank's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

Version	Date	Description
1.0	24/01/2025	First version of Semi-annual Environmental Monitoring Report

ABBREVIATIONS

ADB	Asian Development Bank
AP	Affected Person
BOD	Bio-Chemical Oxygen Demand
BP	Batching Plant
CAR	Corrective Action Requirement
CAREC	Central Asia Regional Economic Corridor
CC	Construction Contractor
COD	Chemical Oxygen Demand
CLO	Community Liaison Officer
CSCS	Consultancy Services for Construction Supervision
CSC	Construction Supervision Consultant
CSEMP	Contractor's Contract Specific Environmental Management Plan
dB (A)	Decibel
DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
ESR	Environmental Sensitive Receiver
GRM	Grievance Redress Mechanism
HIV	Human Immunodeficiency Virus
HS	Health & Safety
HSE	Health Safety and Environment
IEE	Initial Environmental Examination
IFC	International Finance Corporation
MAC	Maximum Admissible Concentration
MoEPA	Ministry of Environmental Protection and Agriculture
MoESD	Ministry of Economy and Sustainable Development
MoM	Minutes of Meeting
MRDI	Ministry of Regional Development and Infrastructure of Georgia
NCN	Non-Conformance Notice
NCR	Non-Conformance Report
NFA	National Forest Agency
NOC	No Objection Certificate
OSHA	Occupational Safety and Health Administration
PPE	Personnel Protective Equipment'

PAPs	Project Affected Persons
PIU	Project Implementation Unit
QC	Quality Control
RD	Road Department
RoW	Right of Way
SC	Supervision Consultant
SEMP	Site Specific Environmental Management Plan
SFF	State Forest Fund
SPS	Safeguard Policy Statement
STD	Sexually Transmitted Diseases
TSS	Total Suspended Solids
VG	Village Governor

TABLE OF CONTENTS

1. INTRODUCTION.....	7
1.1 Preamble	7
1.2 Headline Information	7
2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES	8
2.1 Project Description	8
2.2 Project Contracts and Management	9
2.3 Project Activities during Current Reporting Period	12
2.4 Information on Personnel Working at Construction Site	14
2.5 Description of any Changes to Project Design	16
2.6 Description of Any Changes to Agreed Construction Methods	16
3. ENVIRONMENT SAFEGUARD ACTIVITIES	17
3.1 General Description of Environment Safeguards Activities	17
3.2 Site Audits	17
3.3. Issues Tracking	19
3.4 Trends	21
3.5 Unanticipated Impacts or Risk	22
4. RESULTS OF ENVIRONMENTAL MONITORING.....	23
4.1 Overview of the Monitoring Conducted During Current Period	23
4.2 Summary of Monitoring Outcomes	26
4.4 Waste Management	27
4.5 Spoil Disposal	28
4.6 Health and Safety	28
4.6.1 Community Health and Safety	29
4.6.2 Occupational Health and Safety	29
4.7 Training	30
4.8 Social Management and Grievance Redress Mechanism	30
5. FUNCTIONING OF SSEMP	31
5.1 SSEMP Review	31
6. GOOD PRACTICES	32
6.1 Good Practices	32
7. SUMMARY AND RECOMMENDATION	32
7.1 Summary	32
7.2 Recommendations & Follow-up Actions for the Defect Notification Period	32
ANNEXES	34
Annex 1: Project Photo log during Monitoring Period	34

Annex 2: Latest Water, Ambient Air Quality, Noise, and Vibration Monitoring Reports (July, August & September 2024)	41
Annex 3: Sample Attendance Sheet.....	87
Annex 4: Complaints Log for Reporting Period	93
Annex 5: NCR Regarding the wastewater from Batching Plant.....	94

1. INTRODUCTION

1. The Project involves construction of a new road section of the E-60 highway located in Imereti Region of central Georgia. Section F4 forms the Shorapani-Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60 Highway Route. The Construction Contractor (The Contractor, CC) of the Project is Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint Venture. The Consultant for Construction Supervision (The Engineer, CSC/SC) of the Project is UBM Uluslararası Birleşmiş Müşavirler Müşavirlik Hizmetleri A.Ş. (Turkey) and SMEC International PTY LTD (Australia). The signature date of the Contract is 16.01.2020. All environmental safeguard documents are prepared by the Contractor, approved by the Engineer, and sent to the Roads Department of the Ministry of Regional Development and Infrastructure of Georgia (the Employer, RD).

1.1 Preamble

2. This report presents the Semi-Annual Environmental Monitoring review of the Shorapani-Argveta Section (E60 Highway Route), Lot F4 Construction Project, and covers the period of July to December 2024. The whole road was officially commissioned on 22.10.2024. This report, however, details the works undertaken prior to the road's opening and highlights environmental issues relevant to the defects notification period.
3. This report is the tenth Semi-Annual Environmental Monitoring Report (SAEMR) prepared for the Project.

1.2 Headline Information

4. The Project is a newly built two-lane highway project with a total length of 14.7 km and involves the construction of a new road section of the E-60 highway, namely Lot F4, located in the Imereti region that is one of the main historical, economic, cultural and educational regions of central Georgia. Lot F4 forms the Shorapani-Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60.
5. The project involves the construction of 2x5 tunnels, 2x7 bridges, 4 interchanges, 2x1 overpasses, 5 underpasses, and 50 culverts. The length of the Project road is given below:
 - 1) Right lane (TA – meaning Tbilisi – Argveta direction) - 14.778 km,
 - 2) Left lane (AT – meaning Argveta – Tbilisi direction) - 14.726 km
6. The Project alignment is located within Zestaphoni Municipality, which covers a total area of 423 square kilometers and includes the towns of Zestaphoni and Shorapani as well as numerous small villages such as Kveda Tseva, Shorapani, Zestaphoni, Kveda Sakara, and Argveta. Besides, the alignment runs through forest areas, agricultural land plots, hilly forest slopes, residential areas, and riparian ecosystems.
7. The Project outlines (km 0+000 – 14.7+000):
 - Classification of road: Highway
 - Design speed: 100 km/h
 - Speed Limit: 80 km/h
 - Road length: 14.7 km
 - Road width: 27.60 m
 - Numbers of lanes: 2x2
 - Lane width: 3.75 m
8. The official work commencement date for the construction is 20 October 2020. The period of implementation of the contract, including the Defects Notification Period and until the issuing of the Final Acceptance and Performance Certificate is 60 (sixty) months after the Commencement Date. The project completion date has been extended by more than twelve (12) months. The new

target completion date is set for 30.09.2024. Partial road openings occurred on 24.04.2024, with final commissioning of the entire road achieved on 22.10.2024.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

9. E-60 highway connecting the Black Sea coast to the capital of Georgia passes through a mountainous area 600-850 meters above the sea level. The Project road comprises Lot F4 (Shoropani – Argveta) of the Khevi-Ubisa-Shorapani-Argveta Road (E-60). The proposed highway is located in the complex hilly-mountainous geographical area and crosses numerous mountains, rivers, and ravines. Mixed forests, typical of this climate zone, cover the slopes of the mountains.
10. The alignment is located on the left side of the existing 2-lane road both as an exposed road and through two tunnels. The existing road passes through difficult mountainous terrain paralleling first the River Rikotula and then, the River Dzirula and consists of multiple bridges and several tunnels.
11. The government of Georgia has requested Asian Development Bank (ADB) to finance the construction of the proposed highway. The project is classified as Category A Project – Environmental Safeguards under ADB SPS 2009 since it is considered to have significant diverse impacts over a wide area, such as noise impacts, significant quantities of spoil disposal, road safety impacts, and vibration. Environmental Impact Assessment (EIA) was prepared in May 2019 and disclosed on the ADB website in October 2019.
12. The National EIA document was prepared and submitted by the Roads Department (RD) to the Ministry of Environmental Protection and Agriculture (MoEPA) in December 2017. State Ecological Expertise approval was obtained from MoEPA on 26.03.2018. This covers all scopes under the Project.
13. The Project involves the construction of a new road section of the E-60 highway located in the Imereti Region of Central Georgia (Figure 1). Proposed Lot F4 forms the Shorapani-Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60. The length of the Project road is given below:
 - 1) Right lane (TA – meaning Tbilisi – Argveta direction) - 14.778 km,
 - 2) Left lane (AT – meaning Argveta – Tbilisi direction) - 14.726 km

Figure 1: Location of Project Area



14. The project includes the construction of 12 tunnels with a total length of 8506.36 meters, 14 bridges with a total length of 5020.54 meters, 2 overpasses with a total length of 84.64 meters, 5 underpasses with a total length of 198 meters, 50 culverts with a total length of 1552.07 meters and 4 interchanges.
15. Bridges' length will vary from 32 meters to 846 meters. Tunnels will be constructed with double tubes with lengths from 399 meters to 1193 meters.
16. Technical parameters of the alignment considered during detail design include:
 - Design speed:100 km/h,
 - Speed Limit: 80 km/h,
 - Number of traffic lanes: 4,
 - Width of traffic lane: 3.75 m,
 - Width of each carriageway: 7.5 m,
 - Width of paved shoulder (emergency lane): 2.5 m,
 - Width of verge:1.0 m,
 - Width of central reserve: 5.0 m,
 - Width of the paved shoulder at the central reserve: 1.0 m,
 - Total width of each paved platform: 11.0 m,
 - Width of roadbed: 27.60 m,
 - Carriageway cross-fall on straight sections: 2.5%,
 - The minimum radius of the horizontal curve: 400 m,
 - Maximum longitudinal gradient: 4%,
 - Minimum convex curve: 15 000 m, and
 - Minimum concaved curve: 15 000 m.

2.2 Project Contracts and Management

17. Information related to the project execution is given in Table 1 below:

Table 1: Project Information

Employer	Roads Department of Georgia, Ministry of Regional Development and Infrastructure of Georgia
Funding Source	Asian Development Bank
The Engineer	UBM Uluslararası Birleşmiş Müşavirler Müşavirlik Hizmetleri A.Ş. (Turkey) and SMEC International PTY LTD (Australia)
Contractor	Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint Venture
Contract Number	SARP/CW/OCB-01
Contract Date of the Contractor	16.01.2020
Starting Date of Construction	20.10.2020
Contract Period	36 months (36+24 month engineer)
Original Completion Date	20.10.2023
Extended Completion Date	30.09.2024
Completion Date	22.10.2024
Defects Notification Period	24.3 months 730 days
Contract Price (GEL)	GEL 582 777 310.00

18. The Terms of References (ToR) for the Consultancy Services for Construction Supervision (CSCS) Contract contains the following tasks for the environmental specialists:

- Scrutinize the Contractor's construction method statement for its compliance with environmental aspects,
- Review and approve Contractor Site Specific Environmental Management Plans (EMP),
- Supervise the Contractor in all matters concerning environmental aspects,
- Monitor compliance with the EMP by the Contractor and issue Non-conformances Reports (NCR) as needed,
- Review Contractor's Corrective Action Plans (CAR),
- Review and approve temporary construction areas use and associated Site-Specific EMPs for such sites,
- Assist the Employer in undertaking and monitoring environmental safeguards,
- Identify and report any environmental issues that may arise during construction to the Team Leader and the Employer,
- Perform regular coordination with the Employer for any matters related to the implementation, monitoring, and reporting of ADB's safeguards policy.

19. The obligation of the Contractor, to safeguard, mitigate adverse impacts, and rehabilitate the environment is addressed through environmental provisions in the Fédération Internationale Des Ingénieurs-Conseils (FIDIC) conditions of the contract for construction, Multilateral Development Banks (MDB) harmonized addition- June 2010, and special clauses included in the contract related to the environment, especially, section 116 (pollution) and Appendix X of technical specifications. FIDIC clauses 4.18 (protection of the environment), 4.8 (safety procedures), 6.4 (labor laws), 16.3 (cessation of work/ remedial work), 2.3b (employer's personnel), 4.21 (progress report) are important in this regard.

20. The Contract for CSCS was awarded to UBM for three phases of the project:

- 1) Phase 1: Design review, to be completed in a period of three months and submitted to RD
- 2) Phase 2: Construction supervision and contract administration. The construction period is for 36 months (with an extension of 8 more months)
- 3) Phase 3: Defects Notification Period, 24 months

21. Contact details of ADB, SC, CC, and RD representatives are given in Table 2 below:

Table 2: Main Environmental Staff of ADB, CC, SC, and RD

Organization	Position	Name
ADB	Head Office, Senior Environment Specialist, Portfolio, Results, Safeguards and Gender Unit (PSG), CWRD	Name: Ninette Pajarillaga Contact details will be provided upon request.
	ADB National Environmental Safeguards Consultant	Name: Giorgi Kobaladze Contact details will be provided upon request.
	Associate Safeguards Officer Georgia Resident Mission	Name: Nino Nadashvili Contact details will be provided upon request.
RD	Environmental Specialist	Name: Tamar Nasuashvili

		Contact details will be provided upon request.
	Deputy Head of Environmental Unit	Name: Gia Sopadze Contact details will be provided upon request.
SC	International Environmental Specialist	Emre Duran (started work on June 2022) Contact details will be provided upon request.
	Environmental Expert	Mari Kechkhuashvili (started work on May 2022) Contact details will be provided upon request.
CC	Project Manager	Name: Chen Yuqiang Contact details will be provided upon request.
	Environmental Specialist	Name: David Kurdadze Contact details will be provided upon request.

22. The ongoing civil works and works' progress is given in section 2.3. All awarded contracts included EMPs cleared by ADB and any conditions of applicable national EIA clearance.
23. Under the contract, the Contractor shall comply with all applicable national and local environmental laws and regulations as well as applicable respective standards under the Contract. The Contractor is responsible to:
- Establish an operational system for managing environmental impacts,
 - Develop the SEMP as well as topic-specific EMPs by identifying environmental risks arising from the works, the mitigation measures to be applied, and monitoring to be carried out,
 - Implement the required mitigation measures and monitoring,
 - Take any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor the implementation of the EMP,
 - Submit monthly compliance reports to the engineer.
24. The Contractor, Guizhou Highway Engineering Group Co Ltd, is responsible for the implementation of SEMP throughout the project during the construction phase. The Supervision Consultant, UBM (Engineer), is responsible to:
- Monitor the implementation of SEMP by the Contractor at all its active construction sites and project-related facilities,
 - Prepare monthly and semi-annual Environmental Monitoring reports for the Employer based on the SEMP monitoring and implementation activities.
25. Responsibility for daily management for environmental monitoring and implementation of the SEMP is given to the Health Safety and Environment (HSE) Manager, Mr. Du Jun. He has direct authority from the Project Manager to give instruction to all site staff regarding environmental issues. The project organization chart for key management staff of Guizhou Highway Engineering Group Co Ltd is provided in Figure 2 and the organization chart for Health, Safety, Environmental and Social management is shown in Figure 3.

Figure 2: Contractor Project Management Staff

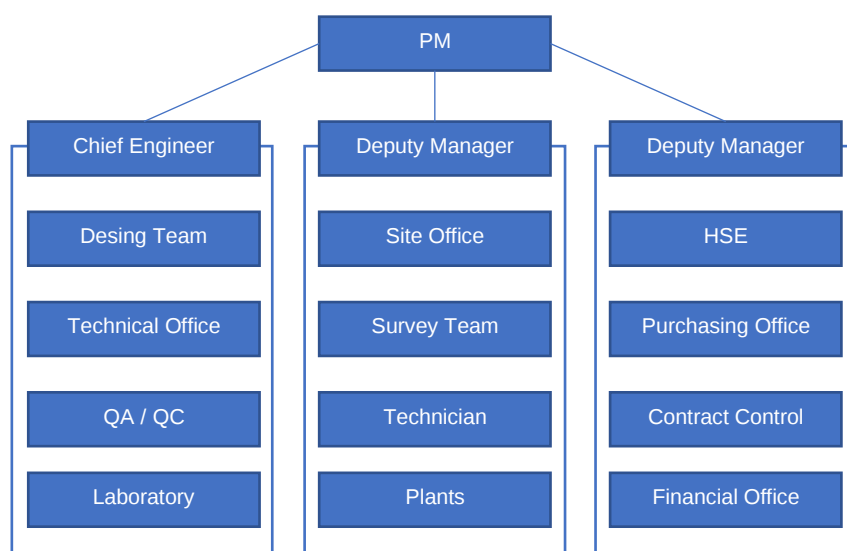


Figure 3: Contractor's H&S, Environmental and Social Organization Chart



2.3 Project Activities during Current Reporting Period

26. Table 3 provides a detailed breakdown of construction activities undertaken across various project sections for the current reporting period. All sections of the road are now fully operational and accessible to public traffic.

Table 3: Project Activities Carried Out during the Reporting Period

Tunnel №1 AT, Argveta side	Completed construction of invert and the final lining, filling of invert with the granular material completed as well	Done
Tunnel №1 TA, Argveta side	Construction of invert and installation of waterproofing membrane is ongoing, final lining is ongoing as well. Completed construction of the permanent portal from Argveta side	Done
Tunnel №2 AT and TA, Tbilisi side	Installation of waterproofing membrane and final lining construction completed, continued invert's filling with subbase material and compaction	Done
Tunnel №3 AT	Continued excavation of the tunnel, installation of steel ribs and 20-cm shotcrete spraying, construction of invert and application of waterproofing membrane and construction of final lining	Done
Tunnel №3 TA	Installation of steel ribs and 20-cm shotcrete spraying as well as installation of waterproofing membrane and construction of final lining is ongoing	Done
Interchange №1	Earthworks and subbase and base preparation	Done
Interchange №2	Continued construction of retaining wall	Done
Interchange №2	Earthwork for construction of embankment fill for the main road and ramps ongoing	Done
Bridge №1 TA	Continued installation of prefabricated steel beams	Done
Bridge №1 AT	Completed installation of rubber bearing parts	Done
Bridge №2 TA	Completed installation of precast concrete slabs for bridge deck, steel bending and casting of bridge deck. Continued construction of New Jersey barriers	Done
Bridge №2 AT	Completed installation of steel beams, commenced installation of precast concrete slabs for arrangement of carriageway	Done
Bridge №3 TA	Continued construction of New Jersey barrier, installation of pre-cast concrete beams and construction of bridge deck completed for all spans	Done
Bridge №3 AT	Continued construction of New Jersey barrier, construction of bridge deck completed for all spans, except of the last ones, continued construction of Abutment #1 and Pier #2 from Argveta side - assembling of steel cages and concrete pour is ongoing	Done
Km 0+00 to 0+240	Cutting of slope and its protection by soil Nailing, steel mesh and shotcrete completed - Tbilisi side.	Done
km 1+860 to km 2+060	Continued mechanical cutting of slope and installation of steel mesh for slope protection	Done
Km 4+800 to km 5+130	Continued trimming of slope by excavators and slope protection, continue excavation of rock by jackhammer and slope protection by shotcrete	Done
Km5 retaining wall	Continued construction of retaining wall's body and embankment fill	Done

27. Progress of works carried out during the reporting period is summarized in Table 4 below:

Table 4: Construction Progress during Reporting Period

Row	Description of main activities	% W.F.	Progress	Cumulative Progress Including May
1	Bill No 1. General Items	0,00%	Actual	100.00%
			Planned	100.00%
2	Bill No 2. Setting Out and Site Clearance	0,23%	Actual	100.00%
			Planned	100.00%
3	Bill No 3. Earthworks	4,21%	Actual	100.00%
			Planned	100.00%
4	Bill No 4. Culverts and Drainage	1,31%	Actual	100.00%
			Planned	100.00%
5	Bill No 5. Bridges and Overpasses	46,00%	Actual	100.00%
			Planned	100.00%
6	Bill No 6 & 7 Tunnels	36,49%	Actual	100.00%
			Planned	100.00%
7	Bill No 8. Road Pavement	4,07%	Actual	100.00%
			Planned	100.00%
8	Bill No 9. Road Furniture	3,42%	Actual	100.00%
			Planned	100.00%
9	Bill No 10. Interchanges	1,81%	Actual	100.00%
			Planned	100.00%
10	Bill No 11. Relocation Of Utilities	0,94%	Actual	100.00%
			Planned	100.00%
11	Bill No 12. Greenery	0,55%	Actual	100.00%
			Planned	100.00%
12	Bill No 13. Retaining Walls	0,47%	Actual	100.00%
			Planned	100.00%
13	Bill No 14. Lighting	0,43%	Actual	100.00%
			Planned	100.00%
14	Daywork	0,05%	Actual	100.00%
			Planned	100.00%
The overall progress of the project		100,00%	Actual	100.00%
			Planned	100.00%

2.4 Information on Personnel Working at Construction Site

28. The following summarizes the overall personnel hired by the Contractor as of December 2024 (defect notification period). Table 5 provides detailed information about personnel working at the site. Additionally, Table 6 shows the monthly change of the local and foreign staff hired.

- Total number of employees: 184
- Foreign Staff (including management, administration, and technical Staff): 99
- Local Staff (skilled and unskilled workers): 85

Table 5: Information of Personnel Working at Site as of December 2024

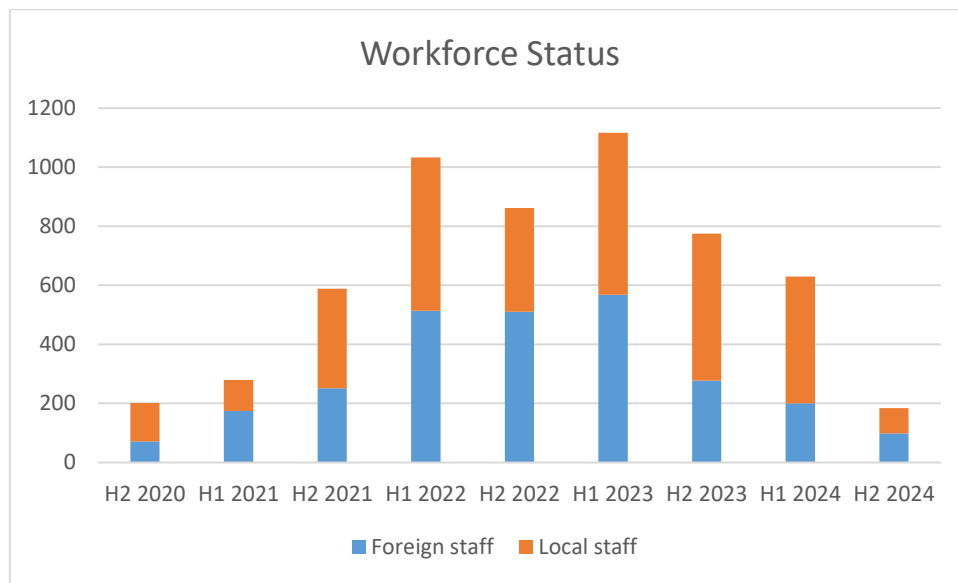
Positions	Number of Employees
Site Management (TL/DTL)	2
Technical Office Manager	11
Highway Engineer	6
Bridge Engineer	5
Tunnel Engineer	3
Geotechnical Engineer	2
Quality Control	4
Surveying	3
Social/Resettlement Specialist	2
Environmental Specialist	3
Health and Safety Specialist	4
Road Safety Specialist	5
Design Coordinator	3
Contract Specialist	1
Support Staff	130
Total	184
HSE Management Staff (breakdown of 6 personnel)	
Jun Du	HSE Manager
Giorgi Karelidze	HS officer
Mirza Bagashvili	HS officer
Giorgi Kimeridze	HS officer
Lasha Peradze	Traffic safety officer
David Kurdadze	Environmental officer

Table 6: The Monthly Change of the local and foreign personnel

Employees' origin	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024
Local	221	204	208	179	114	99
Foreign	162	147	131	116	111	85
Total	383	351	339	295	225	184

29. Figure 4 shows a graphical representation of the number of foreign and local staff hired by the Contractor. The total number of the Contractor's staff has decreased by 71% since the end of the first half of 2024 during this reporting period.

Figure 4: Project Workforce as of December 2024



2.5 Description of any Changes to Project Design

30. The overall project design remains unaltered from its previously established configuration. The implementation of the previously communicated Tunnel 6 variation is now finalized, allowing a road section including this area to be opened to public vehicular traffic.

2.6 Description of Any Changes to Agreed Construction Methods

31. No changes were made to the agreed-upon construction methods during this reporting period.

3. ENVIRONMENT SAFEGUARD ACTIVITIES

3.1 General Description of Environment Safeguards Activities

32. Mari Kechkhuashvili was assigned as a local Environmental Specialist in May 2022, and Emre Duran was assigned as the International Environmental Specialist in June 2022 as part of the Engineer's environmental team. The team's responsibilities include checking the environmental impacts caused by the construction activities and ensuring compliance with the requirements of EIA, SEMP, and topic-specific EMPs.
33. The Engineer's environmental team prepares monthly and semi-annual reports to be submitted to the Resident Engineer (RE). These reports depict the ongoing construction activities, environmental issues, health and safety issues, grievance status, implementation of mitigation measures defined in the EIA, and compliance status. As of December 2024, four monthly reports have been submitted to the RE (as an environmental section in the Engineer's Monthly Progress Report). The general environmental issues in the reports are given in Section 3.3, "Issues Tracking".
34. The environmental teams of the Contractor and the Engineer conduct regular site visits to monitor compliance with the SEMP. The details of the environmental site visits are given in Section 3.2, "Site Audits".
35. The Construction Contractor hired a consultant (Sustainable Development Solutions Caucasus (SDSC) LLC) to prepare environmental management plans and required environmental reports, and to conduct instrumental monitoring studies per EIA requirements.
36. The Contractor's and Engineer's social teams maintain the Grievance Redress Mechanism (GRM). The details of the GRM logbook are given in Section 4.8, "Social Management and Grievance Redress Mechanism".
37. To ensure project safety, both Contractor and Engineer Health and Safety (H&S) teams conduct regular site visits to monitor compliance with H&S rules, traffic safety, and other safety concerns. The Engineer's H&S team maintains a log that tracks both open and closed issues (presented in a report format). Details of these logs can be found in Section 3.3, "Issue Tracking".

3.2 Site Audits

38. Weekly or bi-weekly site visits were carried out by the local environmental specialist of the Engineer, Ms. Mari Kechkhuashvili, to the following sites/processes:
 - Office sites,
 - Camp areas,
 - Access roads,
 - Concrete batching plant No 1 & 2 (new),
 - Cutting of trees,
 - Interchange 1 & 2,
 - Tunnel 1, 2, 3,4 & 3 Portals,
 - All Bridges
 - Tunnel 6 cut and cover area
 - Steel Bar Processing Plant.
39. Mr. Emre Duran, the International Environmental expert, also attends bi-weekly site visits when he is on-site. Additionally, the Contractor's Environmental team also participates in the scheduled site inspections.
40. The inspection method includes visual inspection, interviews with workers, review of permits obtained, and monthly reports.
41. The summary of site visits and the issues encountered during site visits are given in Table 7.

Table 7: Summary of Site Visits and of the Environmental Team During the Reporting Period (Jul-Dec 2024)

Date of Site Visit	Locations	Environmental Issue
09.07.2024	Worker's Camp No 2, 3 & 4	- Poor conditions at sanitary facilities in several camps, with missing soap, toilet paper, and paper towels. Direct discharge of greywater - Poor housekeeping - Inadequate waste management
18. 07. 2024	Worker's Camp No 4; Batching Plant	- Poor condition of sanitary situation - Improper Hazardous waste storage - Batching plant wastewater ponds are full of sediments, and water containing silt and concrete residues is discharged into the river
26.07.2024	Worker's Camps Camp No 2 & 3, Interchange 2, Hazardous Waste Storage Area, Batching Plant, Retaining Wall Construction around new pedestrian bridge	- Batching plant wastewater ponds are full of sediments, and water containing silt and concrete residues is discharged into the river - Poor housekeeping practices - Sanitary facilities have poor conditions, including missing soap, toilet paper, and paper towels - Household waste management - Incorrect hazardous waste management - Improper storage of hazardous materials - Poor housekeeping practices - Domestic wastewater management
09.08.2024	Bridge 1 & 2	Household waste management
13.08.2024	Batching Plant; Bridge 3	- Poor housekeeping practices - Riverbed Protection Problems - Batching plant wastewater ponds are full of sediments
15.08.2024	Spoil Disposal Sites 1,2 & 3, Riverbanks	- Height of Spoil Disposal Sites - River Protection requirements of Spoil Disposal Sites - Riverbed restoration - Slope stability of the several embankments
27.08.2024	Batching Plant	Batching plant wastewater management
10.09.2024	Worker's Camp No 2 & 6, Batching Plant; Spoil Disposal Area 1 & 2	- Gray water management problems - Poor housekeeping practices - Household waste management - Batching plant wastewater management
20.09.2024	Worker's Camp No 1 & 4; Batching Plant; Tunnel Portal No 4 & 5	- Poor waste management - Batching plant wastewater management - Improper spoil material storage
23.09.2024	Batching Plant; Worker's Camp No 2 & 3; Hazardous Waste Storage Area	- Polluted areas, poor waste management. It require regular cleaning - Household wastewater management - Sanitary facilities have poor conditions, including missing soap, toilet paper, and paper towels - Poor housekeeping practices - Batching plant wastewater management
26.09.2024	Regular Site Visit of ADB Team	-
02.10.2024	Spoil Disposal Site 1; Bridge 2 & 3; Several temporary storage sites	- Household waste management - Height of Spoil Disposal Sites - Riverbed restoration process - Temporary storage of spoil material issues
15.10.2024	Spoil Disposal Site 1	- Height of Spoil Disposal Sites - River Protection of Spoil Disposal Site
21.10.2024	Worker's Camp No: 2 & 4; Spoil Disposal Area 1 & 2	- River Protection requirements of Spoil Disposal Sites - Riverbed restoration process - Household waste management
05.11.2024	Workers camp No 1; Batching plant	- The abandoned workers' camp should be cleared. - Batching plant wastewater management
26.12.2024	Spoil disposal area No:1	River Protection requirements of Spoil Disposal Sites

42. In the process of demobilization, the Contractor began to reinstate a portion of the worker camps and certain work completion sites. These areas included: Worker's Camp No. 1, Worker's Camp No. 3 (partially), Worker's Camp No. 4 (partially), Worker's Camp No. 5, and a section of Spoil Disposal Site No. 2. Photographs documenting the reinstated areas are presented in Annex 1.
43. A new Non-Compliance Report (NCR) was issued during this reporting period related to the wastewater from the concrete batching plant. The removal of settling ponds, originally designed to treat wastewater from the concrete batching plant, to facilitate the construction of an access road has resulted in the direct discharge of untreated wastewater into the Borimela River. Although there are several actions to remedy this problem, this NCR is still open (see Annex 5 for NCR, CAR and the letter sent after CAR)

3.3. Issues Tracking

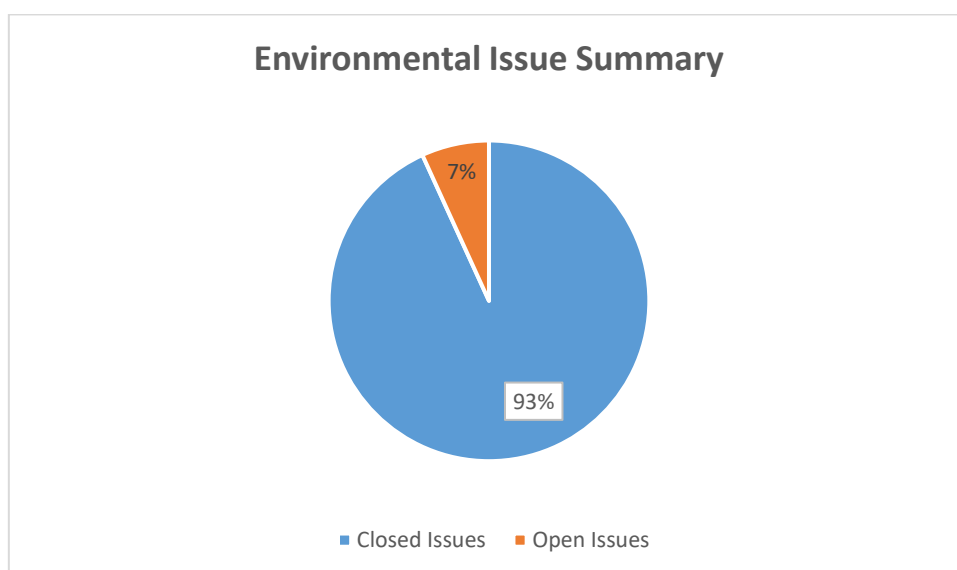
Environmental Issues

44. The Environmental team tracks the statistics of the environmental issues during the reporting period, which is given in Table 8. The status of the issues is given in Figure 5.
45. The Engineer has submitted the identified issues to the Contractor through mail notifications, official letters, and verbally, when appropriate, to take corrective actions. Of the 90 issues identified, 82 have been closed, including 11 remaining issues from the previous monitoring period. There are 8 remaining issues that will be followed up in the Detect Notification Period of the Project.
46. The primary environmental concerns include wastewater discharge from the batching plant, uncontrolled sewage and grey water discharges, waste management, dust during the dry season, hazardous waste management, and sanitation at the WCs and shower areas. Despite multiple warnings from the Engineer about these issues in different locations, the Contractor has only addressed some of them promptly, leaving several issues unresolved.
47. There are several important open environmental issues, which will be also included in the punch list of the final Project. Those include the river protection requirements of spoil disposal sites, which necessitate stringent measures to prevent any contamination or disruption to the river ecosystem. Equally important is the riverbed and riverbank restoration process to restore any damage caused during construction and maintain the natural habitat. Temporary storage of spoil materials in different areas should be managed according to the Georgian legislations to minimize erosion and sedimentation from those areas. Lastly, batching plant wastewater management is critical to prevent harmful chemicals from entering the water bodies, thus protecting aquatic life and maintaining water quality.

Table 8: Summary of Environmental Issue Tracking for the Reporting Period

Issues opened during this reporting period	77
Pending Issues from the previous reporting period	11
Issues closed this reporting period	82
Number of open issues	6
Closed in percentage	93 %

Figure 5: Environmental Issue Summary during the Monitoring Period



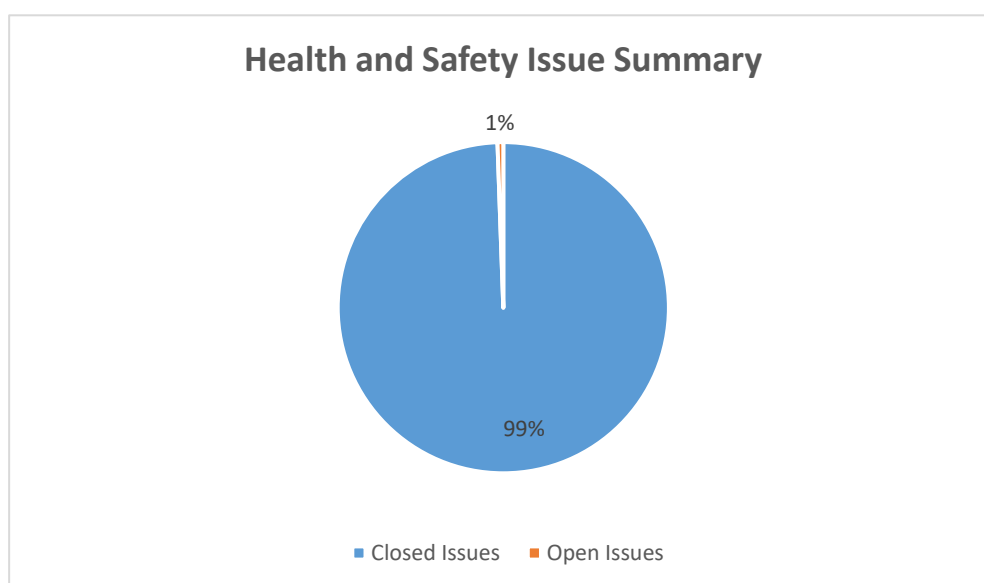
Health and Safety Issues

48. The H&S team is also tracking H&S issues (“good” and “bad” behavior and performances), and their statistics during the reporting period are given in Table 9.
49. The primary health and safety concerns identified include inadequate housekeeping, improper material storage, electrical safety issues involving electrical boxes and transmission cables, damaged lifting equipment, faulty tools and equipment, unsafe practices when working at height, inconsistent use of personal protective equipment (PPE), hazardous and makeshift equipment, poor road conditions, inadequate fire extinguishers, unguarded deep excavations, and driving safety hazards. However, some locations demonstrated positive practices such as proper PPE usage, effective barriers. The Contractor has promptly addressed some issues in accordance with Company health and safety regulations, while others are scheduled for correction in the coming weeks following the reported observations.
50. Data on the number of closed and open issues is presented in Table 9 and Figure 6. This data is based on the observed issues that have been closed or remained open during the Project. Out of three hundred and fifty-four (354) issues, three hundred and fifty-two (352) issues were closed, and there are two (2) issues remaining for the Detect Notification Period to follow up.

Table 9: Summary of Health and Safety Issue Tracking for the Reporting Period

Good behavior and performances during this reporting period	121
Issues opened during this reporting period	308
Pending Issues from the previous reporting period	46
Issues closed this reporting period	352
Number of open issues	2
Closed in percentage	99%

Figure 6: H&S Issue Summary during the Monitoring Period



3.4 Trends

Environmental

51. In general there are several recurring environmental issues during the whole construction period of the Project
52. The primary environmental issues in the Worker's camps included recurrent septic tank leakages, which pose a significant risk of soil and groundwater contamination. Another critical issue is the improper disposal of greywater, which often contains pollutants that can adversely impact the surrounding environment. Additionally, inadequate housekeeping practices and inefficient waste collection systems further exacerbate the environmental challenges in the Project.
53. Additionally, unsafe storage and handling practices of hazardous materials were frequently observed in workshops and certain camps. These practices increased the risk of spills, fires, and exposure to harmful substances, further endangering both human health and the environment.
54. The ongoing and recurring issue that requires immediate resolution is the batching plant wastewater problem. Although several measures have been implemented to address this issue, it persists and remains unresolved. It is critical to resolve the batching plant wastewater issue to prevent hazardous chemicals from entering the river system, thereby mitigating the risk of environmental pollution and safeguarding water quality.
55. In addition, the remaining significant issues at the project's completion stage have been conveyed in section 3.5 under 'unanticipated impact or risk'.

Health and Safety

56. The following items represent recurring health and safety issues at the construction site that need to be addressed.
57. There are concerns regarding electrical safety at the site. Proper measures should be taken to ensure safe electrical installations, usage, and maintenance. This involves regular inspections of electrical components (such as boxes and transmission cables), ensuring proper grounding, and enforcing the use of suitable personal protective equipment (PPE) by all workers.

58. Working at heights poses significant risks if not managed properly. Adequate fall protection systems, such as guardrails, safety nets, or personal fall arrest systems, should be implemented to prevent accidents and protect workers from falls.
59. There are issues related to inadequate lighting inside tunnels. Sufficient and appropriate lighting should be installed to ensure clear visibility and prevent accidents or injuries caused by poor illumination.
60. Proper ventilation is crucial in tunnels to maintain air quality and prevent the accumulation of hazardous gases, dust, or fumes. Adequate ventilation systems should be in place and regularly maintained to create a safe working environment for the workers.
61. There are concerns regarding the use of inappropriate equipment and tools, such as hand-held cutters, ladders, etc. It is important to ensure that workers are provided with suitable and well-maintained equipment and trained on their correct usage. Regular checks and inspections should be conducted to identify and address any equipment-related hazards.
62. There are some issues with poor housekeeping. Poor housekeeping often leads to clutter and obstructions in work areas. Accumulation of materials, tools, equipment, and other objects in walkways and workspaces can create tripping hazards. Untidy workspaces with scattered debris, liquids, or loose objects increase the risk of slip, trip, and fall accidents. Poorly managed storage of flammable materials, chemicals, and waste can create fire hazards. The Contractor should address poor housekeeping with a proactive approach that involves regular cleaning, proper storage and organization of tools and materials, clear labeling, designated waste disposal areas, and ongoing training and awareness programs for employees.
63. The Contractor has been actively addressing and resolving most of the identified health & safety issues on a regular basis. However, it should be noted that certain issues have been recurring due to workers' behavior and limitations in terms of personnel and resources. In light of this, the Engineer has recommended that the Contractor undertake regular training sessions and toolbox meetings to enhance workers' awareness and compliance with HSE regulations during Defect Notification Period as well. Additionally, it is advised to allocate more personnel and resources to effectively tackle HSE issues.

3.5 Unanticipated Impacts or Risk

64. With the project now concluded and entering the defect notification period, several critical issues require sensitive handling and adherence to established management plans. These include **reinstatement all impacted areas** including **spoil storage areas, restoring riverbeds and banks**, implementing **river protection measures** at **spoil disposal sites**, managing **temporary spoil storage areas**, and overseeing **tree planting** initiatives. All associated work must be executed in strict accordance with the relevant management plans.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of the Monitoring Conducted During Current Period

65. Given that the project is in its final stages with nearly all work completed, only three monthly sampling sessions were conducted during the reporting period. During these sessions, water quality was measured at a single point over three months, and vibration monitoring was conducted only once in August. Due to the completion of construction activities in certain areas, several measurements—including water quality, air quality, noise, and vibration—were not carried out for multiple months during the reporting period.
66. The sampling locations for vibration and water quality were selected considering the ongoing construction activities, as shown in Figure 7 and Figure 8. The objective was to evaluate the potential impacts on the environmentally sensitive receptors resulting from the construction activities. The results of the instrumental monitoring are given below in tabular form.

Figure 7: Surface Water Quality Sampling Locations

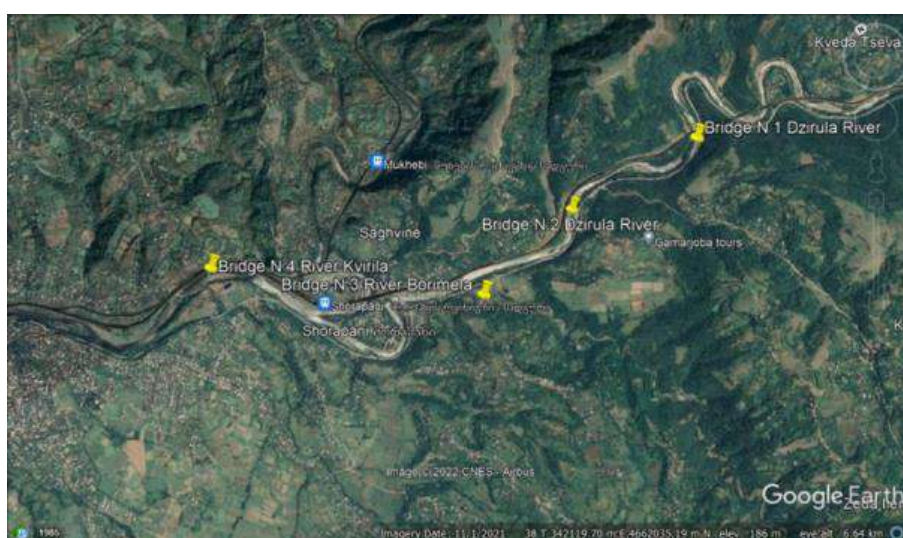
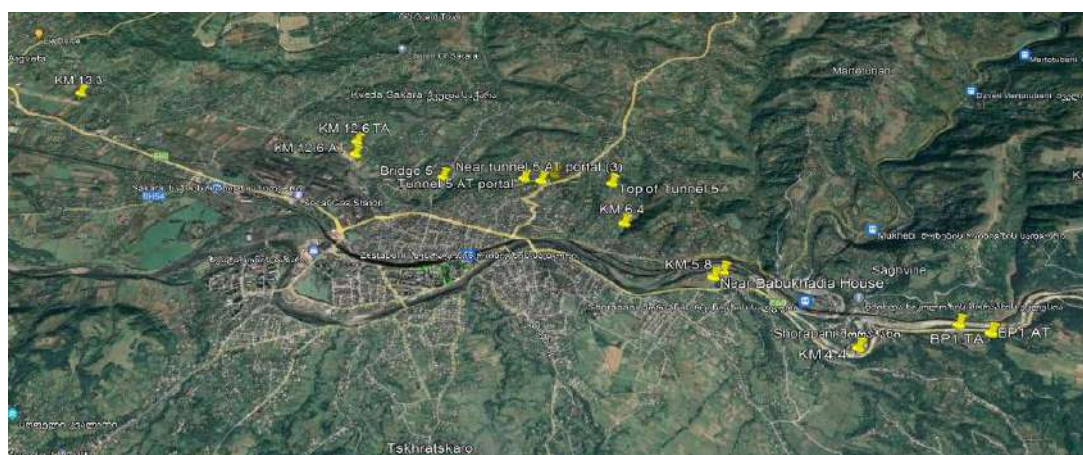


Figure 8: Noise, Vibration, and Ambient Air Quality Sampling Locations



Surface Water Quality

67. As mentioned above only three monthly sampling sessions were conducted for surface water quality analysis during the reporting period of July – December 2024. The samples were collected from River Borimela (Bridge N3) as shown in Table 10. The samples were taken 50 meters upstream and

50 meters downstream (where possible) from the construction site to evaluate the water quality difference before and after the construction activities. Construction near Bridge N1, N2 and Bridge N4 was completed, resulting in the absence of sampling at these points (River Dzirula and River Kvirila) during this reporting period.

68. The results are given in Table 12. TSS parameter change during the reporting period are shown in Figure 9.
69. Over several months of monitoring, the downstream Total Suspended Solids (TSS) levels in the Borimela River have been high and exceeded the baseline levels. High TSS levels in downstream monitoring can result from various factors. For instance, soil erosion due to earthmoving and excavation activities can lead to the exposure of bare soil, resulting in the runoff of eroded particles into the river. Construction sites near riverbanks can destabilize the soil, causing increased erosion and contributing to higher TSS levels. Additionally, improper disposal of construction waste, including materials like concrete and gravel, near or in the river can further degrade water quality. To address this issue, a comprehensive approach is recommended. First, implement erosion control measures like silt curtains downstream to trap sediment, sediment traps within the work zone to collect soil particles, and blankets on exposed soil to prevent erosion. Second, optimize construction practices by minimizing in-stream work, reducing dredging if necessary with proper disposal, and scheduling work during the dry season. Finally, for a long-term solution, riverbank stabilization with native plants after construction is required.
70. Moreover, wastewater discharge from batching plant may also contribute to an increase in TSS levels. To address this issue, implementing water treatment measures at batching plants, such as sedimentation basins or filtration systems, can help minimize the impact of wastewater discharge on river water quality.
71. To comprehensively manage environmental concerns, it is crucial to integrate these solutions with effective erosion control measures and regulatory compliance throughout the construction process. Regular monitoring of TSS levels remains essential for assessing and mitigating potential environmental impacts.

Table 11: Surface Water Quality Monitoring Locations

Location	Coordinates	
	X	Y
River Borimela (Bridge N3)	343185.48	4662005.84

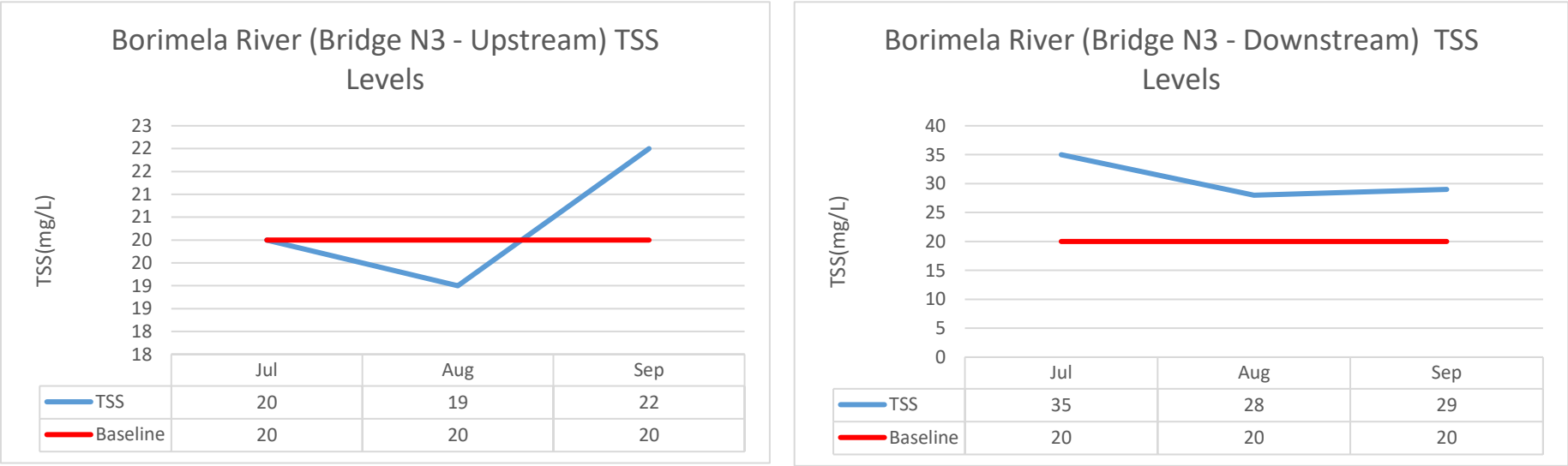
Table 12: Surface Water Results of Borimela River (Bridge N3) Up and Down Stream

Parameters	Unit	EIA Standards (National MAC)	Baseline results <i>(June 2021)</i>	Upstream July 2024)	Downstream July 2024)	Upstream (August 2024)	Downstream (August 2024)	Upstream (September 2024)	Downstream (September 2024)
pH	-	6.5-8.5	8,16	8,01	7,98	7,68	7,98	7,72	7,76
BOD	mg/L	6,00	<3	<3	<3	<3	<3	<3	<3
TSS	mg/L	Increase no more than 0.75 mg/L	20,00	20	35	19	28	22	29
Total N	mg/L	NA	1,50	0,90	1,10	0,80	1,30	0,95	1,30
Total P	mg/L	2,00	0,150	0,02	0,59	0,20	0,48	0,11	0,65
Nitrates	mg/L	40,00	4,00	6,00	5,00	5,00	4,00	7,00	5,00
Phosphates	mg/L	3,50	0,45	0,56	1,79	0,60	1,81	0,35	1,84
Oil and Grease	mg/L	0.3	<0,1	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3

Not 1. The parameters with red color are higher than the National MAC levels at that analysis period.

Not 2. The highlighted parameters are significantly higher than the upstream levels at that analysis period.

Figure 9: Borimela River (Bridge N3) Upstream and Downstream TSS Chart (July-December 2023)



Vibration Monitoring

72. There is only one vibration location and the vibration monitoring has been conducted on August monitoring session only. The vibration monitoring location is given in Table 13.

Table 13: Vibration Measurement Location

Location	Coordinates	
	X	Y
Residential house near the highway	337672	4664569

73. According to the criteria set in the EIA, based on BS 6472 and German standard DIN 4150-3: 1999, there is no damage likely to structure building due to vibration at peak particle velocity (PPV) less than 5 mm/sec, risk of cosmetic damage from 5 to 15 mm/sec, and risk of structural damage at PPV greater than 15 mm/sec.
74. Table 14 presents vibration result that exceed the Georgian legislation limit (1.5 mm/s) in two locations during three monitoring sessions.
75. The vibration measured level was within the Georgian legislation limit (1.5 mm/s), and also well within the permissible range outlined in the Environmental Impact Assessment (EIA) and contract conditions.

Table 14: Vibration Monitoring Result

Location/Session	Month	Peak Particle Velocity (PPV) mm/sec			Peak Vector Max Values		Legislation limits	
		Transversal Y	Vertical Z	Longitudinal X	mm/sec	db	mm/sec	db
Residential house near the highway	Aug	0,284	0,244	0,370	0,380	77,60	1,100	67 (+10)

4.2 Summary of Monitoring Outcomes

76. The Contractor has hired Sustainable Development Solutions Caucasus (SDSC) LLC, a certified laboratory, to conduct regular monthly instrumental monitoring of the parameters for air and water quality and noise and vibration levels to control pollution levels. Testing has been carried out almost every month since August 2021.
77. However, during this reporting period water quality was measured at a single point over three months, and vibration monitoring was conducted only once in August at one point
78. According to the water quality results, TSS levels are high during most of the measurement sessions for Borimela river. These can result from various factors including soil erosion due to extensive earthmoving and excavation, leading to the exposure of bare soil and subsequent runoff of eroded particles into the river, insufficient erosion control measures, Construction sites near riverbanks may destabilize the soil, causing increased erosion and contributing to higher TSS levels. Additionally, improper disposal of construction waste, including materials like concrete and gravel, near or in the river can further impact water quality.
79. The he measured vibration levels do not exceed the Georgian vibration standards, which are established based on human comfort levels.

4.4 Waste Management

80. The Contractor developed a Waste Management plan to describe the requirements for establishing and conducting proper waste management and to address the handling, storage, and management of wastes to assure that works are conducted in a manner that minimizes environmental risk and is shared with the MoEPA in 2020. The Contractor received comments in January 2021 for the revision of the plan. After revision and resubmission of the plan dated April 23, 2021, it was approved dated May 7, 2021, by the MoEPA. The Contractor officially shared the plan with the Engineer on July 2, 2021.
81. The Contractor renewed the agreement with the “Zestafoni Cleaning and Improvement Service Center” of the Zestafoni Municipality regarding the provision of the collection and transportation of domestic wastes on February 2, 2023. The agreement is valid until February 1, 2025.
82. The Contractor has developed a waste log to record the movements of all non-hazardous and hazardous wastes. This register/log mainly includes;
- Type of waste,
 - The volume or mass of the waste,
 - Date of disposal,
 - Sub-Contractor’s name.
83. Detailed information regarding the type of waste disposed of and responsible licensed companies are given in Table 15.

Table 15: Waste Management (July - December 2024)

#	Domestic/Hazardous Waste & Sewage	Volume /kg/m ³	Licensed Company	Transferred
1	Household waste	70 m ³	NNLEP “Zestafoni Cleaning and Improvement Service Center” of the Zestafoni Municipality Removing waste, occurring/done/produced every day	70 m ³
2	Sewage water	60 m ³	By “Sanitary” LLC owned Vacuum trucks discharged into the Terjola municipality “Sewage Treatment Plant” (STP)	150 m ³
3	Used tyres	35 pcs*30 kg = 1050 kg	Non-profit legal entity “Wasteless” -Extended Producers Responsibilities- (Used for heavy equipment road-crossing purposes)	0 m ³
4	Hydraulic and used oil	350 kg	Non-profit legal entity “Wasteless” -Extended Producers Responsibilities-or to Hazardous waste contractor “Sanitary” LLC	0 kg
5	Waste paints and varnishes	45 kg	Sanitary LLC Incinerator	0 kg
6	Chemical additive tanks	N/A	The chemical additives are delivered by truck cisterns to the contractor and accumulate in designated storage tanks for further use.	N/A
7	Oil drums	35 pcs	Has been stored at GHEC HWTSA for reuse in liquefied hazardous waste proper storage or transportation to “Sanitary” LLC CWAA	0 pcs
8	Used food oil	N/A	“Sanitary” LLC	N/A
9	Printer tonner	15 kg	“Sanitary” LLC	0 kg

10	Absorbents (e.g., oil filters, polluted clothes and materials)	135 kg	"Sanitary" LLC Incinerator	0 kg
11	Medical Waste	N/A	"Sanitary" LLC Incinerator All medical treatment, Contractors' personnel are passing at the local hospitals	N/A
12	Metal Scraps	3 m ³	"Geosteel" LTD	0 m ³
13	Wood Waste	2.5 m ³	Given to Local Citizens	2.5 m ³
14	Contaminated soil	150 kg	"Sanitary" LLC Bio-remediation area	0 kg

84. The Contractor keeps records of waste transfer notes filled and signed by the Contractor, waste carrier, and receiving facility. During the reporting period, **70 m³** of domestic waste was transferred to be disposed of.
85. The Contractor constructed septic tanks in worker's camp no 2 and worker camp no 3 with a total capacity of 90 m³ and 7 m³ respectively. During the reporting period, the Contractor discharged **150 m³** of domestic wastewater through licensed vacuum trucks owned by "Sanitari LLC".
86. A total of **635 kg** of hazardous waste has been safely stored at the Contractor's Temporary hazardous waste disposal area.
87. Despite the completion of the project, hazardous waste, scrap metal, and unused heavy machinery remain at the site in certain areas. It is essential to dispose of the hazardous waste at a licensed disposal facility and to closely monitor and remove the scrap metal and equipment from the site as soon as possible.

4.5 Spoil Disposal

88. The main source that generates a large amount of the waste is earthworks, specifically: the excavation of the soil and rock soil material excavated from the tunnels. The estimated volume for spoil generation is given below:
- Estimated spoil generation: 2,502, 415 m³
 - Estimated spoil reuse for embankments: 2,200,000 m³
 - Spoil needs to be disposed of: 300,000 m³ (estimated spoil disposal into Spoil Disposal Area No 1: 120.000 m³, estimated spoil disposal into Spoil Disposal Area No 2: 250.000 m³, estimated spoil disposal into Spoil Disposal Area No 3: 30.000 m³)
89. Three spoil disposal areas were approved by the Ministry of Regional Development and Infrastructure of Georgia (MRDI) and the Roads Department of Georgia (RD). The first approved area is located at the administrative borders of Zestafoni Municipality, N45 Sergo Zakariadze Street (c/c: N32.10.41.096; 32.10.41 .262), right side of the existing E60 main Road KM 185+00 to KM 200+00 with a total area of 42,438 m². The second approved spoil area is located in the village Kveda Sakara (C/C N32.03.44.018) with a 10,900 m² total area. The Contractor started using a third spoil disposal area approved by the MRDI after the excavation work commenced at Tunnel 6 location. This area was initially proposed and utilized at the beginning of the Project but was discontinued a few months later, as it is located far away from the main excavation working areas.
90. River protection requirements for spoil disposal sites should be carefully considered and implemented during the Defect Notification Period.

4.6 Health and Safety

91. HSE Team is responsible implementation, supervision, and monitoring of the construction activities on-site on a daily basis to ensure occupational and community health and safety are maintained. The Contractor's HS specialists include the followings:

Jan Du: Head HSE officer

Mirza Bagashvil: Local HSE staff

Giorgi Karelidze: Local HSE officer

Lasha Peradze: Traffic Safety

Giorgi Kimeridze: Local HSE staff

92. Engineer's local H&S specialists, Mr. Zaal Giorgadze and Nerses Makarov have been continuously monitoring the Contractor's H&S performance in working areas. They have provided advice to the Contractor on how it mitigate risks. H&S specialist, Mr. Giorgadze, prepared and reported approximately 18 weekly (4.5 monthly) safety observation reports during the reporting period. Moreover, Mr. Zura Rukhadze joined the Engineer's team as Road Safety Specialist to ensure traffic safety during construction.

4.6.1 Community Health and Safety

93. No incident reported involving community members or no traffic incident was recorded during the reporting period.
94. The Contractor has appointed flagmen to control the movement of heavy vehicles on construction sites and the traffic while cars/heavy vehicles enter and exit the construction sites. All flagmen were trained about the HSE requirements of the Project.
95. The Contractor has appointed security officers on all construction site entrances and installed a CCTV camera control system in all camp areas and batching plants. Camp areas and batching plants are fenced along to provide isolation. DETECTORI (The Security Company) has installed CCTV Cameras, which are being watched and operated by the DETECTOR

4.6.2 Occupational Health and Safety

96. Regular safety inspection of the construction site is being conducted by H&S representatives as a continuous process. H&S specialist reports all safety deviations to HSE Manager daily. In addition, the H&S department conducts mandatory HSE induction for new employees and started to provide special safety training for workers to raise safety culture including working at height, flagmen training, driving safety, requirements for earthwork activities, and lifting operations. Moreover, the HS specialist prepares documentation for training, risk assessments for special works, and work procedures.
97. The Contractor is providing the mandatory PPEs and special protective equipment for the on-site workers. Nevertheless, more than enforcement of usage is required. Therefore, the Contractor purchased welder's aprons (30 no's) for welders and safety shoes and distributed them to workers.
98. Based on data provided by the HSE team, there were no major or minor accidents during the reporting period. The accidents reported during the reporting period are given in Table 16.
99. There are daily walkthroughs by the HSE inspectors from the Contractor and Engineer and bi-weekly/monthly HSE meetings.

Table 16: Types of Accidents Reported

Accident Type	Reporting Period (Jul – Dec 2024)	Total (Dec 2020 to Dec 2024)
Near Miss	0	0
Accident Minor	0	1
Accident Major	0	1

100. The Contractor assigned permanent medical personnel (doctor – Irma Porchkhidze and nurse – Nino Okroshidze) to provide medical assistance in a medical emergency, including the safe evacuation of the injured person. The doctor started working at the beginning of 2022.

4.7 Training

101. The Contractor continues the training program to form a lasting culture on the behavior and activities of employees, affecting the environmental, social, and safety performances. The program covers both mandatory induction training and work-specific training.
102. During the reporting period, given training covered the following topics:
- Induction training,
 - Tree cutting,
 - Tops soil stripping and storage,
 - Hazardous non-hazardous waste handling storage,
 - Refueling process,
 - Environmental and social training,
 - Earthwork activities,
 - Driving safety,
 - Lifting operations,
 - Working at height,
 - Flagmen training,
 - Toolbox talks,
 - Refresh the Concrete Mixer truck drivers training cisterns to wash out procedure and Usage of the separators,
 - Refueling Process, and
 - Blasting activities.
103. The Contractor conducted general Environmental and Social training on environmental issues for 86 persons of the Contractor's staff. The training covered basic knowledge related to environmental legislation, topsoil preservation, air quality, waste management, land contamination, spill prevention, biodiversity, noise, resources management, chemical management, community safety, cultural heritage, and code of conduct. Sample attendance lists/sheets are enclosed in Annex 3.
104. During reporting period 1632 toolbox talks were provided by the HS&Environment officers, foremen, or site supervisors.

4.8 Social Management and Grievance Redress Mechanism

105. Grievance Redress Mechanism (GRM) was developed by the Contractor and submitted to Engineer for reviewing and approval (February 19, 2021- Ref: 20210403-0148-GHEC-UBM, April 3, 2021- Ref: 20210316-0134-GHEC-UBM and April 16, 2021-Ref: 20210416-0166-GHEC-UBM). GRM was approved in April 2021.
106. A total of twelve (12) grievances were received during the reporting period, either directly from the local community or through the Employer. Of these, seven (7) grievances were related to damaged infrastructure/assets, four (4) grievances pertained to restrictions or loss of access, and one (1) grievance concerned a drawdown in water levels in wells and the provision of alternative water supply, as detailed in Table 17. Out of the twelve grievances, three (3) have been resolved, four (4) are under review by the Engineer for investigation and subsequent forwarding to the Contractor or the Responsible Department (RD), one (1) has been forwarded to the Contracting Company (CC) for necessary action, and four (4) have been forwarded to the RD for further instructions and action. Additional details of the complaints are provided in Annex 4 - Complaints Log.

Table 17: Status of Grievances

S#	Nature of Grievances	No. of total Grievances	Results		
			Open	Close	Tech. Hold
1	Damage to Infrastructure/Assets	7	2	2	3
2	Inclusion in LARP	-	-	-	-
3	Restriction or loss of access	4	1	1	2
4	Compensation Rate	-	-	-	-
5	HSE Concerns	-	-	-	-
6	Disturbance: Noise / Vibration / Dust	-	-	-	-

7	Other	1	1	-	-
Total		12	16	-	-

107. The Contractor implements community meetings and regular visits to the site. The details of these communication with stakeholders are given in the Social Safeguard Monitoring Report (July – December 2024).

5. FUNCTIONING OF SEMP

5.1 SEMP Review

108. To ensure that all potential mitigation measures are applied during the construction phase, the Contractor shall be responsible for preparing his Specific Environmental Management Plans (SEMP) during the pre-construction phase. The approved SEMP include the following plans:

(i) Topic Specific Plans:

- Waste Management Plan
- Spoil Disposal Plan for Arrangement of Spoil Disposal Area
- Re-cultivation Plan
- Traffic Management Plan
- Occupational Health and Safety Plan
- Community Health and Safety Plan
- Emergency Preparedness and Response Plan
- Air Quality Plan
- Spill Response Plan
- Vibration Monitoring Plan
- Clearance, Re-vegetation, and Restoration Management Plan
- Groundwater Management Plan
- Tunnel Blasting Plan
- Noise Management Plan
- Biodiversity Action Plan
- Topsoil Stripping and Storage Plan
- Chance Find Procedure
- Grievance Redress Mechanism
- H&S and E&S Training Plan
- Bridge Construction Plan
- Community Liaison Management Plan

(ii) Site Specific Plans:

- Construction Camp Management Plan
- Asphalt Plant Plan
- Rock Crushing Plant Plan
- Concrete Batching Plant Plan.
- Site-Specific Method Statement for Working in the Area above the
- Railway Line at KM 6.3 and at Bridge BR 4.0.1. AT/TA
- Detailed Method of Working in the Water and Workplan
- Contaminated Spoil Treatment Plan

109. SEMP was developed by the Contractor and submitted to the Engineer for reviewing and approval (January 27, 2021-Ref:20210127-0090-GHEC-UBM, February 19, 2021- Ref:20210219-00108-GHEC-UBM, March 2, 2021-Ref:20210302-0118-GHEC-UBM March 15, 2021-Ref: 20210315-0129-GHEC-UBM and May 28, 2021- Ref 20210528-0148). SEMP was approved on June 7, 2021, with Engineer's letter no 0333-CSAE60-F4-UBM-GE.

6. GOOD PRACTICES

6.1 Good Practices

110. Following best practices are being adopted by the Contractor due to site inspections, issuance of inspection reports, and discussions during construction progress meetings headed by the Engineer:
- The Contractor has introduced a series of measures to improve waste collection at the construction site, including increasing the frequency of waste removal and placing additional waste bins throughout the site. These measures have been effective in maintaining a cleaner work environment and reducing the risk of waste-related hazards.

7. SUMMARY AND RECOMMENDATION

7.1 Summary

111. The Engineer observed a sum of 79 Environmental and 314 Health and Safety issues during site visits and inspections. Out of 79 Environmental issues (and additional 11 issues from the previous reporting period), 82 issues were closed, and there are 8 issues remaining for the “Detect Notification Period” of the Project to follow up. Similarly, out of 314 H&S issues (and additional 40 issues from the previous reporting period), 352 issues were closed, and there are 40 corrective action requirements for the “Detect Notification Period” of the Project to follow up.
112. The Contractor has hired a certified laboratory (given in Annex 2), Sustainable Development Solutions Caucasus (SDSC) LLC, and carried out instrumental monitoring, including, vibration and surface water quality measurements, during the reporting period.
113. The environmental monitoring results show no significant variance from previous monitoring periods. TSS values are essential parameters for surface water quality.
114. Noise and vibration levels are sometimes higher than local and international regulations allow. The Contractor could arrange working schedules at these locations to reduce the levels.

7.2 Recommendations & Follow-up Actions for the **Defect Notification Period**

115. The following recommendations describe any actions required to achieve full compliance with each requirement in the EIA, EMP, and conditions of the contract during the Defect Notification Period:
- The main environmental issues to be solved during the Defect Notification Period are listed below;
 - **River Protection Measures for Spoil Disposal Areas:** To safeguard the river ecosystem, the contractor must implement stringent measures at spoil disposal sites. These measures are crucial to prevent any contamination or disruption caused by pollutants like sediment, chemicals, or debris reaching the river. Maintaining high environmental standards at these sites is critical for the contractor to ensure the river's continued health and biodiversity.
 - **Riverbed and Riverbank Restoration:** The Contractor must also prioritize the riverbed and riverbank restoration process. This involves repairing any damage caused during construction and actively maintaining the natural habitat. These efforts are essential for the river's long-term health and the sustainability of its ecosystem. Restoration activities for the contractor may include stabilizing the riverbanks to prevent erosion, and removing any debris or pollutants that have entered the river.
 - **Temporary Storage of Spoil Materials:** The Contractor must manage the temporary storage of spoil materials in different areas according to Georgian legislation. By

implementing proper management practices, the contractor ensures that temporary storage doesn't lead to long-term environmental degradation.

- **Drainage Management at Spoil Disposal Site:** The Contractor must effectively address drainage problems at Spoil Disposal Site No: 3. This will prevent waterlogging and potential contamination of surrounding areas, protecting both the environment and the health of nearby communities. Solutions may include installing proper drainage systems, constructing retention ponds, and ensuring water is directed away from sensitive areas.
 - **Batching Plant Wastewater Management:** The Contractor must prioritize the proper management of batching plant wastewater. This will prevent pollution and protect the area's water quality. This issue was also raised as a NCR and is still open. To maintain environmental standards and public health, the Contractor should implement effective wastewater treatment and disposal practices. This may involve increasing the frequency of sediment trap changes and constructing larger settling ponds.
 - **Hazardous Waste and Scrap Metal Disposal:** While the project has been completed and in the defect notification period, the presence of hazardous waste, scrap metal, and unused heavy machinery at the site requires immediate attention. The Contractor is required to ensure the proper disposal of all hazardous waste at a licensed facility. Additionally, the timely removal of scrap metal and unused equipment from the site is essential to maintain site safety and prevent potential environmental risks. The Contractor should actively monitor and expedite the removal process to ensure compliance with all applicable regulations and mitigate any potential adverse impacts.
 - **Tree planting:** To effectively mitigate the impacts of tree removal, the Contractor must promptly initiate tree planting and restoration activities. These activities must be carried out in strict compliance with the approved Clearance, Re-vegetation, and Restoration Management Plan, as well as the Tree Compensation Plan. This includes adhering to designated planting schedules, selecting suitable native species, and implementing appropriate post-planting care measures to ensure the successful establishment and long-term survival of the newly planted trees. The Contractor is responsible for the timely and efficient execution of this critical component of the project's environmental mitigation strategy.
-
- There are several H&S issues to improve, such as
 - Poor housekeeping,
 - Improper material storage,
 - Electrical safety,
 - Damaged lifting equipment,
 - Damaged tools and equipment,
 - Unsafe working at height,
 - PPE usage,
 - Dangerous and hand-made equipment,
 - Poor Access road conditions,
 - Deep excavation without guard rails and
 - Driving safety

ANNEXES

Annex 1: Project Photo log during Monitoring Period

	
Poor Management of Discharge Water (Batching Plant, July 2024)	Poor Riverbed Protection (Bridge 3, July2024)



Leaking Sewage Tank (Worker's Camp No 3, July 2024)



Metal Scraps (Near Workshop, July 2024)



Household Waste Collection (August 2024)



Poor Riverbed Protection and Improper water Usage (Bridge 3, August 2024)



Riverbed and Embankment Reinstatement Issue (Bridge No: 1, August 2024)



Batching Plant Temporary Sediment Trap Construction (August 2024)

	
Poor Housekeeping (Worker's Camp No 4, September 2024)	Abandoned Worker's Camp No 1 (September 2024)
	
Abandoned Worker's Camp No 1 (September 2024)	Poor Housekeeping and waste management (Worker's Camp No 4, September 2024)

	
Spoil Removal from Spoil Disposal Area No:1 (October 2024)	Waste Collection (October 2024)

Annex 2: Latest Water, Ambient Air Quality, Noise, and Vibration Monitoring Reports (July, August & September 2024)



ENVIRONMENTAL MONITORING REPORT
WATER, AMBIENT AIR QUALITY, NOISE AND VIBRATION
MONITORING

F4, SECTION OF E60 HIGHWAY

PREPARED BY

SDSC LLC

DIRECTOR: GIORGI GULIASHVILI

A handwritten signature in blue ink, appearing to read "Giorgi Guliashvili", is placed over the printed name.



July, 2024

Table of Contents

1. INTRODUCTION	3
1.1. PROJECT DESCRIPTION	3
1.2. PURPOSE OF THE MONITORING	3
2. MONITORING LOCATIONS.....	4
2.1. WATER MONITORING LOCATIONS.....	4
3. MONITORING PARAMETERS AND METHODOLOGIES.....	4
3.1. SURFACE WATER MONITORING METHODOLOGY.....	4
4. LABORATORIES.....	5
5. SAMPLING ACTIVITIES.....	5
5.1. SURFACE WATER MONITORING FIELD ACTIVITIES.....	5
6. ANALYTICAL RESULTS AND CONCLUSIONS	6
6.1. SURFACE WATER MONITORING	6

List of Tables

Table 2-1 Surface water monitoring locations.....	4
Table 3-1 Surface water monitoring parameters.....	4
Table 6-2 Bridge N3 (Borimela River) up and down stream monitoring results.....	6

List of Figures

Figure 1-1 Road Location Map	3
Figure 2-1 Surface water monitoring locations.....	4
Figure 5-3 Bridge N3 upstream (Borimela River)	5
Figure 5-4 Bridge N3 downstream (Borimela River)	6

Attachments

Attachment 1 - Water tests laboratory reports

1. Introduction

1.1. Project description

The Government of Georgia is endeavoring to make Georgia a regional and logistics hub and more attractive for businesses. The East West Highway (EWH), stretching 410 km from Sarpi on the Black Sea, at the border with Turkey, through the center of the country to the capital Tbilisi and on to the border with Azerbaijan, is the main inter-regional and international route between western and eastern Georgia, as well as its neighboring.

In light of the traffic growth on EWH, the high percentage of truck traffic, and the difficult terrain and resulting geometric profiles, capacity expansion of the current 2-lane mountainous section between Chumateleti and Argveta is crucial to realizing full potential of the EWH with improvements to the highway either completed or underway on each side of this section.

Therefore, the Government has requested the Asian Development Bank (ADB) and several other development partners to finance the remaining bottleneck sections (Chumateleti - Argveta) on the EWH.

The Project involves construction of a new road section of the E-60 highway located in Imereti Region of central Georgia (see Figure 1-1). Section F4 forms the Shoropani – Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60. The length of the Project road is as follows:

- Right lane (TA – meaning Tbilisi – Argveta direction) - 14.778 km;
- Left lane (AT – meaning Argveta – Tbilisi direction) - 14.726 km.

Figure 1-1 Road Location Map



1.2. Purpose of the monitoring

As per contract LTD SDSC was requested to conduct regular surface water, Noise and Vibration monitoring along the F4 section of highway construction. The purpose of the monitoring was to collect monitoring data of surface water, Air quality, Dust, Noise and Vibration and compare with baseline monitoring results as well as with project specified standards based on EIA.

2. Monitoring locations

2.1. Water Monitoring Locations

Water monitoring locations proposed by the client are reflected in Table 2-1, and in Figures 2-1. Bridge N3 up and down stream monitoring location also covers the Batching plant 1 monitoring locations.

Table 2-1 Surface water monitoring locations

Monitoring Locations	Coordinates	Monitoring Date
River Borimela (bridge N3) up and downstream	342153.91 4661762.47	20/07/24

Figure 2-1 Surface water monitoring locations



3. Monitoring parameters and methodologies

3.1. Surface Water monitoring methodology

Monitoring parameters for surface water monitoring were provided by Client based on EIA requirements. List of parameters to be monitored and test methods are reflected in Table 3-1. National Maximum Allowable Concentrations (MAC) in surface waters have been used as a reference.

Table 3-1 Surface water monitoring parameters

Chemical Parameters	Measuring Unit	Test Method	National MAC
pH	-	SST ISO 10523:2010	6.5-8.5

BOD ₅	mg/l O ₂	SST ISO 5815-2:2003/2020	6
COD	mg/l O ₂	SST ISO 6060:2010	30
TSS	mg/l	SST ISO 11923: 2007	Increase by no more than 0.75
Total N	mg/l	GD 52.24.364-95	N/A
Total P	mg/l	SST ISO 6878:2004/2020	2
Nitrates (NO ₃)	mg/l	SST ISO 7890-3 : 2008	40
phosphates (PO ₄)	mg/l	SST ISO 6878:2004/2020	3.5
Oil & Grease	mg/l	EPA 413.1	0.3
Microbiological Parameters			
Total coliforms	MPN in 100 ml	SST ISO 9308 -1:2014/2014	400

The water samples are taken by the certified monitoring technicians, which are specially trained for the water sampling activities. The analysis of the water samples was conducted in the accredited DG Consulting Laboratory with ISO 17025 standard and if necessary, samples are sent to SYN LAB (Germany).

4. Laboratories

Water and air quality samples taken during field activities were sent to DG consulting laboratory (Georgia) and SYN LAB (Germany) for analyses. Samples were analyzed in accordance analytical suites and test methods proposed in chapter

5. Sampling activities

5.1. Surface Water Monitoring field activities

Sampling activities were undertaken on 20/07/24. The field team included Lasha Bibichadze and Giorgi Guliashvili. As per initial request from the Client, monitoring plan was included 1 bridge construction sites up and down stream monitoring.

All of the proposed sampling points were sampled successfully during the field visit.

Figure 5-1 Bridge N3 upstream (Borimela River)



Figure 5-2 Bridge N3 downstream (Borimela River)



6. Analytical results and conclusions

6.1. Surface water monitoring

The results of surface water monitoring are indicated in the tables below:

Table 6-1 Bridge N3 (Borimela River) up and down stream monitoring results

Parameters	EIA Standards (National MAC)	Baseline results (June 2021)	Upstream	Downstream
pH	6.5-8.5	8.16	8.01	7.98
BOD	6mg/l	<3	<3	<3
COD	30mg/l	32	25	26
TSS	Increase no more than 0.75mg/l	20	20	35
Total N	N/A	1.5	0.9	1.1
Total P	2mg/l	0.15	0.018	0.59
Nitrates	40mg/l	4	6	5
Phosphates	3.5mg/l	0.45	0.56	1.79
Oil and Grease	0.3mg/l	<0.1	<0.3	<0.3
Total Coliforms	400MPN	ND	1200	1300

Increased TSS concentration at downstream sampling location, could be the result of the concrete batching plant operation which is located between up and down stream monitoring points.



ENVIRONMENTAL MONITORING REPORT
WATER, AMBIENT AIR QUALITY, NOISE AND VIBRATION
MONITORING

F4, SECTION OF E60 HIGHWAY

PREPARED BY

SDSC LLC

DIRECTOR: GIORGI GULIASHVILI

A handwritten signature in blue ink, appearing to read "Giorgi Guliashvili", is placed over a faint circular stamp.



August, 2024

Table of Contents

1. INTRODUCTION	2
1.1. PROJECT DESCRIPTION	2
1.2. PURPOSE OF THE MONITORING	3
2. MONITORING LOCATIONS.....	3
2.1. WATER MONITORING LOCATIONS.....	3
3. MONITORING PARAMETERS AND METHODOLOGIES.....	4
3.1. SURFACE WATER MONITORING METHODOLOGY.....	4
4. LABORATORIES.....	5
5. SAMPLING ACTIVITIES.....	5
5.1. SURFACE WATER MONITORING FIELD ACTIVITIES	5
6. ANALYTICAL RESULTS AND CONCLUSIONS	6
6.1. SURFACE WATER MONITORING	6
7. VIBRATION MONITORING	7
MONITORING RESULTS	10

List of Tables

Table 2-1 Surface water monitoring locations.....	4
Table 3-1 Surface water monitoring parameters.....	5
Table 6-2 Bridge N3 (Borimela River) up and down stream monitoring results.....	7

List of Figures

Figure 1-1 Road Location Map	3
Figure 2-1 Surface water monitoring locations.....	4
Figure 5-3 Bridge N3 upstream (Borimela River)	6
Figure 5-4 Bridge N3 downstream (Borimela River)	6

Attachments

Attachment 1 - Water tests laboratory reports

1. Introduction

1.1. Project description

The Government of Georgia is endeavoring to make Georgia a regional and logistics hub and more attractive for businesses. The East West Highway (EWH), stretching 410 km from Sarpi on the Black Sea, at the border with Turkey, through the center of the country to the capital Tbilisi and on to the border with Azerbaijan, is the main inter-regional and international route between western and eastern Georgia, as well as its neighboring.

In light of the traffic growth on EWH, the high percentage of truck traffic, and the difficult terrain and resulting geometric profiles, capacity expansion of the current 2-lane mountainous section between Chumateleti and Argveta is crucial to realizing full potential of the EWH with improvements to the highway either completed or underway on each side of this section.

Therefore, the Government has requested the Asian Development Bank (ADB) and several other development partners to finance the remaining bottleneck sections (Chumateleti - Argveta) on the EWH.

The Project involves construction of a new road section of the E-60 highway located in Imereti Region of central Georgia (see Figure 1-1). Section F4 forms the Shoropani – Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60. The length of the Project road is as follows:

- Right lane (TA – meaning Tbilisi – Argveta direction) - 14.778 km;
- Left lane (AT – meaning Argveta – Tbilisi direction) - 14.726 km;
- n) - 14.726 km.

Figure 1-1 Road Location Map



1.2. Purpose of the monitoring

As per contract LTD SDSC was requested to conduct regular surface water, Noise and Vibration monitoring along the F4 section of highway construction.

The purpose of the monitoring was to collect monitoring data of surface water, Air quality, Dust, Noise and Vibration and compare with baseline monitoring results as well as with project specified standards based on EIA.

2. Monitoring locations

2.1. Water Monitoring Locations

Water monitoring locations proposed by the client are reflected in Table 2-1, and in Figures 2-1. Bridge N3 up and down stream monitoring location also covers the Batching plant 1 monitoring locations.

Table 2-1 Surface water monitoring locations

Monitoring Locations	Coordinates	Monitoring Date
River Borimela (bridge N3) up and downstream	342153.91 4661762.47	31/08/24

Figure 2-1 Surface water monitoring locations



3. Monitoring parameters and methodologies

3.1. Surface Water monitoring methodology

Monitoring parameters for surface water monitoring were provided by Client based on EIA requirements. List of parameters to be monitored and test methods are reflected in Table 3-1. National Maximum Allowable Concentrations (MAC) in surface waters have been used as a reference.

Table 3-1 Surface water monitoring parameters

Chemical Parameters	Measuring Unit	Test Method	National MAC
pH	-	SST ISO 10523:2010	6.5-8.5
BOD ₅	mg/l O ₂	SST ISO 5815-2:2003/2020	6
COD	mg/l O ₂	SST ISO 6060:2010	30
TSS	mg/l	SST ISO 11923: 2007	Increase by no more than 0.75
Total N	mg/l	GD 52.24.364-95	N/A
Total P	mg/l	SST ISO 6878:2004/2020	2
Nitrates (NO ₃)	mg/l	SST ISO 7890-3 : 2008	40
phosphates (PO ₄)	mg/l	SST ISO 6878:2004/2020	3.5
Oil & Grease	mg/l	EPA 413.1	0.3
Microbiological Parameters			
Total coliforms	MPN in 100 ml	SST ISO 9308 -1:2014/2014	400

The water samples are taken by the certified monitoring technicians, which are specially trained for the water sampling activities. The analysis of the water samples was conducted in the accredited DG Consulting Laboratory with ISO 17025 standard and if necessary, samples are sent to SYN LAB (Germany).

4. Laboratories

Water and air quality samples taken during field activities were sent to DG consulting laboratory (Georgia) and SYN LAB (Germany) for analyses. Samples were analyzed in accordance analytical suites and test methods proposed in chapter

5. Sampling activities

5.1. Surface Water Monitoring field activities

Sampling activities were undertaken on 31/08/24. The field team included Lasha Bibichadze and Giorgi Guliashvili. As per initial request from the Client, monitoring plan was included 1 bridge construction sites up and down stream monitoring.

All of the proposed sampling points were sampled successfully during the field visit.

Figure 5-1 Bridge N3 upstream (Borimela River)



Figure 5-2 Bridge N3 downstream (Borimela River)



6. Analytical results and conclusions

6.1. Surface water monitoring

The results of surface water monitoring are indicated in the tables below:

Table 6-1 Bridge N3 (Borimela River) up and down stream monitoring results

Parameters	EIA Standards (National MAC)	Baseline results (June 2021)	Upstream	Downstream
pH	6.5-8.5	8.16	7.68	7.98
BOD	6mg/l	<3	<3	<3
COD	30mg/l	32	22	28
TSS	Increase no more than 0.75mg/l	20	19	28
Total N	N/A	1.5	0.8	1.3
Total P	2mg/l	0.15	0.2	0.48
Nitrates	40mg/l	4	5	4
Phosphates	3.5mg/l	0.45	0.6	1.81
Oil and Grease	0.3mg/l	<0.1	<0.3	<0.3
Total Coliforms	400MPN	ND	1100	1200

Increased TSS concentration at downstream sampling location, could be the result of the concrete batching plant operation which is located between up and down stream monitoring points. All other results were observed within the EIA standards or baseline results.

7. Vibration Monitoring

Date of conducted monitoring activities: 5/08/2024

Monitoring point coordinates: X = 337672 Y = 4664569

SDSC LLC was assigned to determine the level of vibration near the house of a local resident living near the freeway on the F4 section of the E-60 highway. The purpose of the monitoring was to measure the vibration generated during the operation of the compactor under full load conditions and determine its impact. The mentioned monitoring activities were conducted in accordance with specially prepared ToR and technical agreement. This agreement was based on requirements and methodologies defined by international guidelines.

During the works, 30 meters away from the monitoring point (the distance is measured on the satellite map, through a straight line), the compactor was working at full load. In the process of work, the distance between the compactor and the monitoring point periodically increased or decreased in accordance with the movement of the equipment.

Standards to be used for measurement, also required equipment and methodology are determined in the Environmental Monitoring Plan of the project. The instrument was calibrated and tested according to

standard procedures prior to monitoring. Information about measurement tools used for monitoring activities is provided in 7.2.

Monitoring works were carried out on August 5, 2024, in sunny weather conditions. The average temperature in the afternoon was 30-32°C.

The location of the monitoring point and the compactor on the satellite is shown in 0. And see the photos of the current works below.

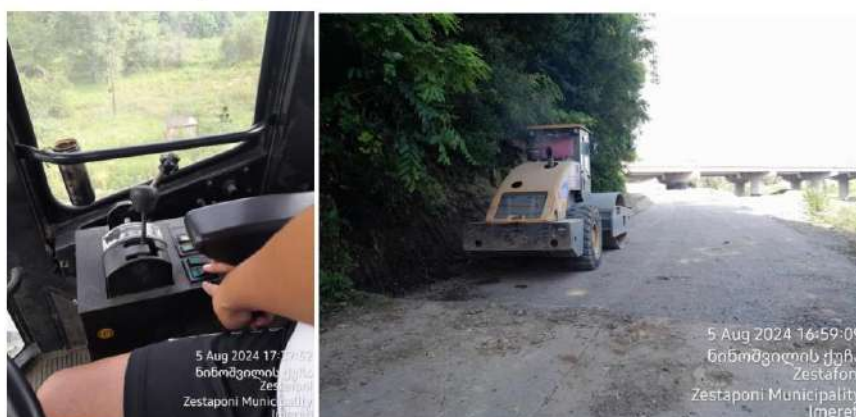


Monitoring point on satellite map



Monitoring point

The point was chosen in agreement with the owner, near the outer wall of the residential house.



Working process

The photos show the working process of the compactor and the interior cabin, where the workload of the equipment can be seen.

7.1. Monitoring Results

The results of vibration measurements are presented in the form of tables and graphs in this chapter. Also, comparison of the obtained results with Georgian legislative standards.

Vibration Monitoring Results

Geophone	Tran	Vert	Long	Unit
PPV	0.284	0.244	0.370	mm/s
ZC Freq	>100	14	32	Hz
Time (Rel. to Trig)	1919.731	1456.127	1595.922	sec
Peak Acceleration	0.020	0.010	0.021	g
Peak Displacement	1.418	0.505	0.566	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	3.9	4.2	4.4	

Peak Vector Sum 0.380 mm/s, recorded at 1595.922 sec.

Limits of peak vector values are defined by the Georgian legislation, which represent sum of vectors parallel to each axis. The device used for the survey provides data on maximum peak values measured for further analysis of findings of vibration measurements. During the survey standard project, values were applied. The project standards define the following requirements:

Permissible Vibration Levels According to the Georgian Legislation

Mean Geometric Frequencies of Octave Bands	Permissible Values			
	Vibration Acceleration		Vibration Speed	
	m/sec ²	dB	m/sec 10 ⁻⁴	dB
2	4.0	72	3.2	76
4	4.5	73	1.8	71
8	5.6	75	1.1	67
16	11.0	81	1.1	67
31.5	22.0	87	1.1	67
63	45.0	93	1.1	67
Corrected and equivalently corrected values and levels	4.0	72	1.1	67

Source: EIA for Khevi-Ubisa and Shorapani-Argveta road sections

The data provided in the above-mentioned table shows that if vibration lasts for a specific period, permissible vibration levels could be exceeded by 5 dB. When vibration is not constant, exceedance by 10 dB is allowable; in this case, the absolute vibration value is multiplied by coefficient of 0.32. Moreover,

according to the regulation, permissible vibration levels in hospitals and other healthcare facilities should be reduced by 3dB.

The device used for monitoring of vibration levels measures vibration speed. Consequently, measured values are presented in m/sec not db. The formula below shows how to calculate measured values in dB:

Value of transverse vibration provided in dBV can be calculated based on data on speed (mm/sec) using following formula:

$$Lv = 20 * \lg(V/Vref)$$

Lv = speed levels in decibels, mm/sec (dBV)

V = rms speed amplitude

Vref = reference for speed amplitude, mm/sec (Vref=0.00005 mm/sec)

Results of measured vibration at construction area:

Vibration measurement results and legislation limits

Point	Peak vector max values		Legislation limits	
	mm/sec	Db	m/sec 10 ⁻⁴	Db
NVD 1	0.380	77.6	1.1	67 (+10)

If we compare the received data with the norm established by the Georgian legislation, the vibration level slightly exceeds the allowed limit (by 0.6 dB).

The results of the vibration measurement at the monitoring points are given below in a form of graphs:

Date/Time Manual at 16:58:01 August 5, 2024
Range Geo: 254.0 mm/s
Record Time 2343.0 sec at 1024 sps
Operator/Setup: ILIA/ILIA.MMB

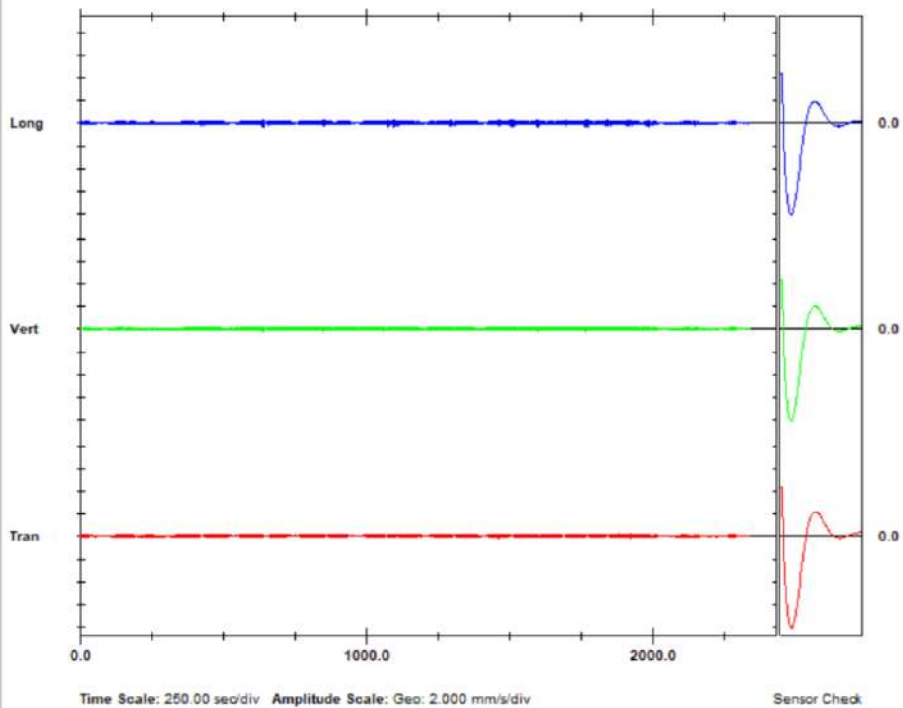
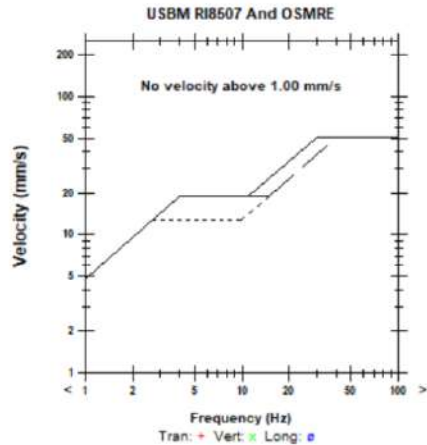
Serial Number UM15617 V 10-89 Micromate ISEE
Battery Level 3.7 Volts
Unit Calibration September 4, 2019 by Instantel
File Name UM15617_20240805165801.IDFW

Notes

Location:
Client:
User Name:
General:

	Tran	Vert	Long	
PPV	0.284	0.244	0.370	mm/s
ZC Freq	>100	14	32	Hz
Time (Rel. to Trig)	1919.731	1456.127	1595.922	sec
Peak Acceleration	0.020	0.010	0.021	g
Peak Displacement	1.418	0.505	0.566	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	3.9	4.2	4.4	

Peak Vector Sum 0.380 mm/s at 1595.922 sec



Vibration monitoring graph

7.2. *Monitoring Methodology and Equipment*

Vibration Level Measurements

The vibration level measurements are conducted using the Instantel Micromate Plus Device. It records the waveform data to the integrated memory. After the monitoring activities, the recorded data is processed in the PC Program Blastware, which is also created by the company Instantel.

The vibration measurement is conducted using Transducer (Geophone), which is connected to the Instantel Micromate Plus device. Three ground spikes are attached to the bottom of the transducer, pushed to the ground covering the attached spike fully. The geophone shall be directed towards the vibration source using the directional arrow, which is engraved on the Geophone itself. After this, the sandbag is put on top of the transducer for solid compaction.

After the correct installation of the Geophone, sensorcheck program is launched on the Micromate Plus device for further correct vibration measurements. In order to start vibration monitoring, the tests for sensor check program shall be Passed, which is displayed on the Micromate Plus device. After the mentioned activities, recording of the vibration waveform is starting.

As it was already described above, after recording the Vibration Waveform session, the device saves the session to the integrated hard drive. After what, the session is transferred to the Personal Computer and processed using special program called Blastware, which is also created by the Company Instantel. The program created event report, which includes vibration waveform graphs, timing and other detailed information about the recorded session.



Instantel Micromate vibration monitoring device



ENVIRONMENTAL MONITORING REPORT
WATER, AMBIENT AIR QUALITY, NOISE AND VIBRATION
MONITORING

F4, SECTION OF E60 HIGHWAY

PREPARED BY

SDSC LLC

DIRECTOR: GIORGI GULIASHVILI

A handwritten signature in blue ink, appearing to read "Giorgi Guliashvili", is placed over the printed name.



September, 2024

Table of Contents

1. INTRODUCTION	3
1.1. PROJECT DESCRIPTION	3
1.2. PURPOSE OF THE MONITORING	3
2. MONITORING LOCATIONS.....	4
2.1. WATER MONITORING LOCATIONS.....	4
3. MONITORING PARAMETERS AND METHODOLOGIES.....	4
3.1. SURFACE WATER MONITORING METHODOLOGY.....	4
4. LABORATORIES.....	5
5. SAMPLING ACTIVITIES.....	5
5.1. SURFACE WATER MONITORING FIELD ACTIVITIES	5
6. ANALYTICAL RESULTS AND CONCLUSIONS	7
6.1. SURFACE WATER MONITORING	7

List of Tables

Table 2-1 Surface water monitoring locations.....	4
Table 3-1 Surface water monitoring parameters.....	5
Table 6-2 Bridge N3 (Borimela River) up and down stream monitoring results.....	7

List of Figures

Figure 1-1 Road Location Map	3
Figure 2-1 Surface water monitoring locations.....	4
Figure 5-3 Bridge N3 upstream (Borimela River)	6
Figure 5-4 Bridge N3 downstream (Borimela River)	6

Attachments

Attachment 1 - Water tests laboratory reports

1. Introduction

1.1. Project description

The Government of Georgia is endeavoring to make Georgia a regional and logistics hub and more attractive for businesses. The East West Highway (EWH), stretching 410 km from Sarpi on the Black Sea, at the border with Turkey, through the center of the country to the capital Tbilisi and on to the border with Azerbaijan, is the main inter-regional and international route between western and eastern Georgia, as well as its neighboring.

In light of the traffic growth on EWH, the high percentage of truck traffic, and the difficult terrain and resulting geometric profiles, capacity expansion of the current 2-lane mountainous section between Chumateleti and Argveta is crucial to realizing full potential of the EWH with improvements to the highway either completed or underway on each side of this section.

Therefore, the Government has requested the Asian Development Bank (ADB) and several other development partners to finance the remaining bottleneck sections (Chumateleti - Argveta) on the EWH.

The Project involves construction of a new road section of the E-60 highway located in Imereti Region of central Georgia (see Figure 1-1). Section F4 forms the Shoropani – Argveta portion of the Khevi-Ubisa-Shorapani-Argveta section of the E-60. The length of the Project road is as follows:

- Right lane (TA – meaning Tbilisi – Argveta direction) - 14.778 km;
- Left lane (AT – meaning Argveta – Tbilisi direction) - 14.726 km;
- n) - 14.726 km.

Figure 1-1 Road Location Map



1.2. Purpose of the monitoring

As per contract LTD SDSC was requested to conduct regular surface water, Noise and Vibration monitoring along the F4 section of highway construction.

The purpose of the monitoring was to collect monitoring data of surface water, Air quality, Dust, Noise and Vibration and compare with baseline monitoring results as well as with project specified standards based on EIA.

2. Monitoring locations

2.1. Water Monitoring Locations

Water monitoring locations proposed by the client are reflected in Table 2-1, and in Figures 2-1. Bridge N3 up and down stream monitoring location also covers the Batching plant 1 monitoring locations.

Table 2-1 Surface water monitoring locations

Monitoring Locations	Coordinates	Monitoring Date
River Borimela (bridge N3) up and downstream	342153.91 4661762.47	07/09/24

Figure 2-1 Surface water monitoring locations



3. Monitoring parameters and methodologies

3.1. Surface Water monitoring methodology

Monitoring parameters for surface water monitoring were provided by Client based on EIA requirements. List of parameters to be monitored and test methods are reflected in Table 3-1. National Maximum Allowable Concentrations (MAC) in surface waters have been used as a reference.

Table 3-1 Surface water monitoring parameters

Chemical Parameters	Measuring Unit	Test Method	National MAC
pH	-	SST ISO 10523:2010	6.5-8.5
BOD ₅	mg/l O ₂	SST ISO 5815-2:2003/2020	6
COD	mg/l O ₂	SST ISO 6060:2010	30
TSS	mg/l	SST ISO 11923: 2007	Increase by no more than 0.75
Total N	mg/l	GD 52.24.364-95	N/A
Total P	mg/l	SST ISO 6878:2004/2020	2
Nitrates (NO ₃)	mg/l	SST ISO 7890-3 : 2008	40
phosphates (PO ₄)	mg/l	SST ISO 6878:2004/2020	3.5
Oil & Grease	mg/l	EPA 413.1	0.3
Microbiological Parameters			
Total coliforms	MPN in 100 ml	SST ISO 9308 -1:2014/2014	400

The water samples are taken by the certified monitoring technicians, which are specially trained for the water sampling activities. The analysis of the water samples was conducted in the accredited DG Consulting Laboratory with ISO 17025 standard and if necessary, samples are sent to SYN LAB (Germany).

4. Laboratories

Water and air quality samples taken during field activities were sent to DG consulting laboratory (Georgia) and SYN LAB (Germany) for analyses. Samples were analyzed in accordance analytical suites and test methods proposed in chapter

5. Sampling activities

5.1. Surface Water Monitoring field activities

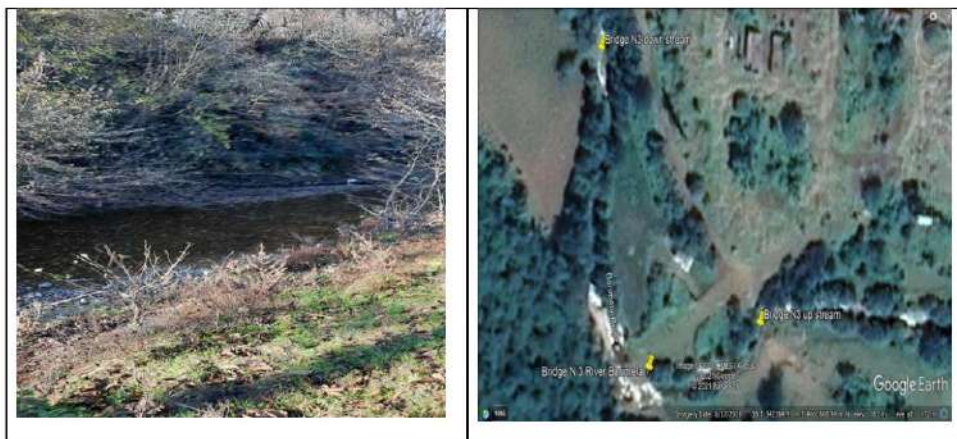
Sampling activities were undertaken on 07/09/24. The field team included Lasha Bibichadze and Giorgi Guliashvili. As per initial request from the Client, monitoring plan was included 1 bridge construction sites up and down stream monitoring.

All of the proposed sampling points were sampled successfully during the field visit.

Figure 5-1 Bridge N3 upstream (Borimela River)



Figure 5-2 Bridge N3 downstream (Borimela River)



6. Analytical results and conclusions

6.1. Surface water monitoring

The results of surface water monitoring are indicated in the tables below:

Table 6-1 Bridge N3 (Barimela River) up and down stream monitoring results

Parameters	EIA Standards (National MAC)	Baseline results (June 2021)	Upstream	Downstream
pH	6.5-8.5	8.16	7.72	7.76
BOD	6mg/l	<3	<3	<3
COD	30mg/l	32	25	30
TSS	Increase no more than 0.75mg/l	20	22	29
Total N	N/A	1.5	0.95	1.3
Total P	2mg/l	0.15	0.11	0.65
Nitrates	40mg/l	4	7	5
Phosphates	3.5mg/l	0.45	0.35	1.84
Oil and Grease	0.3mg/l	<0.1	<0.3	<0.3
Total Coliforms	400MPN	ND	1000	1100

Increased TSS concentration at downstream sampling location, could be the result of the concrete batching plant operation which is located between up and down stream monitoring points. All other results were observed within the EIA standards or baseline results.

საქ GAC


საქ GAC

სსიპ „აკრედიტაციის ერთიანი ეროვნული ორგანო –
აკრედიტაციის ცენტრი“

აკრედიტაციის მოწმობა
EA BLA-ის ხელმოწერი

GAC-TL-0160
ადასტურებს, რომ
შპს „დგ კონსალტინგი“-ს
საგამოცდო ლაბორატორია
მდებარე: ქ. თბილისი, მირზა გელოვანი ქუჩა N10
შეფასდა და აკმაყოფილებს საქართველოს სტანდარტის
სსტ ისო/იეკ 17025:2017/2018-ის მოთხოვნებს

აკრედიტაციის სფერო მოცემულია აკრედიტაციის მოწმობის დანართში, რომელიც
წარმოადგენს მის განუყოფელ ნაწილს.

აკრედიტაციის ცენტრის
გენერალური დირექტორი

რეგისტრაციის თარიღი
04 ოქტომბერი 2021 წ.

ძალაშია
28 ივლისი 2025 წ.

საქ GAC


ბ.ა.

0186 თბილისი, ალ. ყაზბეგის გამზ. №42ა

1381

აკრედიტაციის მოწმობის N GAC-TL-0160

განკარგულება N06/177

თარიღი: 28.07.2021

„ვატკივებ“

აკრედიტაციის ცენტრის გენერალური დირექტორი

ნათია მიქელაძე



საგამოცდო ლაბორატორიის აკრედიტაციის სფერო
შპს „დე კონსალტინგი“

მისამართი: ქ. თბილისი, მ. გელოვანის N10

საგამოცდო ლაბორატორიის აკრედიტაციის სფერო

გამოცდა/ნიმუშის აღება						
ლაბორატორიის სამუშაო უბნის/ფილიალის (ასეთის არსებობისას) №						
№	სეს/ესნ კოდი	გამოსაცდელი/ ნიმუშის აღების პროდუქტი/მასალა	გამოცდების სახეობა	საკვლევი პარამეტრები	გამოცდის/ნიმუშის აღების მეთოდის იდენტიფიკაცია და დასახელება	მოქმედი სფერო/ტიპი
1	2	3	4	5	6	7
1		გარემო (საცხოვრებელი და სამუშაო გარემო ღია და დახურულ სივრცეებში)	ინსტრუმენტალური მეთოდი ხელსაწყო - Micromate	ვიბრაცია	DGL-IN 15-G-02 ვალიდირებული მეთოდი	
			ინსტრუმენტალური მეთოდი ხელსაწყო Rion NL-52	ხმაური	DGL-IN 09-G-03 ვალიდირებული მეთოდი	
2		ჰაერი	ინსტრუმენტალური მეთოდი ხელსაწყო - Dustrak DRX 8533	მტვერი ატმოსფერო (მყისიერი)	DGL-IN 16-G-04 ვალიდირებული მეთოდი	
			ინსტრუმენტალური მეთოდი მტვრის საზომი Microdust Pro-აპარატი	მტვერი პასიური	DGL-PR 13-G-02 ვალიდირებული მეთოდი	

		ინსტრუმენტალური მეთოდი ანემომეტრი PCE-423	ჰაერის მოძრაობის სიჩქარე	ვალიდირებული მეთოდი DGL-IN 14-G-03	
		ინსტრუმენტალური მეთოდი ანემომეტრი PCE-423	ტემპერატურის განსაზღვრა	ვალიდირებული მეთოდი DGL-IN 14-G-03	
		ინსტრუმენტალური მეთოდი GASTEC GV-110S (იაპონია)	CO - ნახშირ (II) ჟანგი	ვალიდირებული მეთოდი DGL-IN 85-G-02	
		ინსტრუმენტალური მეთოდი GASTEC GV-110S (იაპონია)	NO ₂ - აზოტის (IV) ჟანგი	ვალიდირებული მეთოდი DGL-IN 85-G-02	
		ინსტრუმენტალური მეთოდი GASTEC GV-110S (იაპონია)	SO ₂ - ნახშირ (IV) ჟანგი	ვალიდირებული მეთოდი DGL-IN 85-G-02	
		ინსტრუმენტალური მეთოდი GASTEC GV-110S (იაპონია)	O ₃ - ოზონის განსაზღვრა	ვალიდირებული მეთოდი DGL-IN 85-G-02	
3	2201/22 02	წყლები, ბუნებრივი მტკნარი წყლები, ნატურალური ან ხელოვნური მინერალური	პოტენციომეტრული მეთოდი	წყალბადის მჩვენებელი (pH)	სსტ ისო 10523:2010

6. აქ

	წყლების ჩათვლით, გაზიანი, მაქრისა ან სხვა დამატებული ან საგემოვნო-არომატული ნივთიერებების დამატების გარეშე, ყინული და თოვლი/ წყლები, მინერალურისა და გაზიანის ჩათვლით, მაქრისა ან სხვა დამატებული ან საგემოვნო-არომატული ნივთიერებების დანამატების შემცველობით.				
		პოტენციომეტრული მეთოდი	ელემენტარობა, მინერალიზაცია (TDS)	სსტ ისო 7888 : 2007	
		პოტენციომეტრული მეთოდი	გაზსნილი ჟანგბადი	სსტ ისო 5814:2012/2020	
		ტურბიდიმეტრია	სიმღვრივე	სსტ ისო 7027- 1:2016/2017	I
		სპექტოფოტომეტრი	ფერი	სსტ ისო 7887:2011/2013	
		ტიტრიმეტრია	ჟანგბადის პერმანგანატული მოხმარება	სსტ ისო 8467:2007	

Handwritten signature

		გრავიმეტრია	შეტყუარებული ნაწილაკები	სსტ ისო 11923:2007	
		გრავიმეტრია	ნავთობი და ზეთები	EPA 1664 EPA 413.1	
		სპექტოფოტომეტრი	NO2	სსტ ისო 6777:2008	I
		სპექტოფოტომეტრი	NO3	სსტ ისო 7890-3:2008	I
		სპექტოფოტომეტრი	NH4	სსტ ისო 7150-1:2010	I
		სპექტოფოტომეტრი	PO4	სსტ ისო 6878:2004/2020	I
		ფოტომეტრი	ნარჩენი ქლორი	ისო 7393-2:1985	I
		ტიტრიმეტრია	კალციუმი	სსტ ისო 6058:2008	
		ტიტრიმეტრია	მაგნიუმი	სსტ ისო 6059:2008	
		ტიტრიმეტრია	სიხისტე	სსტ ისო 6059:2008	
		ტურბიდიმეტრია	სულფატის განსაზღვრა	გოსტ 4389-78	
		ტიტრიმეტრია	ქლორიდის განსაზღვრა	სსტ ისო 9297:2008	
		ტიტრიმეტრია	ჰიდროკარბონატის განსაზღვრა	გოსტ 23268.3-78	

		ესტრუქცია და საექტროფიტომეტრია	ფენოლი	EPA 420.1	I
		საექტროფიტომეტრია	რკინა	EPA 8008	I
		საექტროფიტომეტრია	სილიციუმი	სახელმძღვანელო დოკუმენტი 52.24.433- 2005	
		ტურბიდიმეტრია	ბარიუმი	ვალიდირებული მეთოდი DGL-IN 70-G-01	
		მიკრობიოლოგიური მაჩვენებლები			
		ნიმუშის მომზადება, დათესვა, კულტივირება	მუზოფილური აერობებისა და ფაულტაური ანაერობების რაოდენობა	სსტ ისო 6222:2008	I
		ფილტრაცია	ნაწლავური ჩხირის კოლიფორმ ბაქტერიები და E. coli	სსტ ისო 9308 - 1:2014/2014	I
		ფილტრაცია	S. faecalis	სსტ ისო 7899-2:2007	I
		ფილტრაცია	Pseudomonas aeruginosa	სსტ ისო 16266:2007	I
		ფილტრაცია	სულფიტმარდუცი რეზული კლოსტრიდიები (Cl perfringens)	სსტ ისო 6461-2:2007	

4	2202/2201	ზედაპირული წყლები (წყალსატევები, მდინარეები, ტბები, ზღვები და ა.შ.) და ჩამდინარე წყლები	პოტენციომეტრული მეთოდი	წყალბადის მაჩვენებელი (pH)	სსტ ისო 10523:2010	
			პოტენციომეტრული მეთოდი	ელემენტარობა, მინერალიზაცია (TDS)	სსტ ისო 7888 : 2007	
			პოტენციომეტრული მეთოდი	გაბნელობის მაჩვენებელი	სსტ ისო 5814:2012/2020	
			ტურბიდომეტრია	სიმღვრივე	სსტ ისო 7027- 1:2016/2017	I
			ტიტრიმეტრია	ფანგბადის ქიმიური მოხმარება COD (მგ/ლ)	სსტ ისო 6060:2010 ისო 15705:2002	
			ტიტრიმეტრია	ფანგბადის პერმანანტული მოხმარება (მგ/ლ)	სსტ ისო 8467:2007	
			პოტენციომეტრია	ფანგბადის ბიოლოგიური მოხმარება BOD5 (მგ/ლ O2)	სსტ ისო 5815- 2:2003/2020	
			გრავიმეტრია	შეტენარებული ნაწილაკები	სსტ ისო 11923: 2007	

		გრავეტრია	ნავთობი და ზეთები	EPA 413.1	
		სპექტოფოტომეტრი	NO2	სსტ ისო 6777:2008	I
		სპექტოფოტომეტრი	NO3	სსტ ისო 7890-3:2008	I
		სპექტოფოტომეტრი	NH4	სსტ ისო 7150-1:2010	I
		სპექტოფოტომეტრი	Total N	სახელმძღვანელო დოკუმენტი 52.24.364-95	
		სპექტოფოტომეტრი	PO4	სსტ ისო 6878:2004/2020	I
		ფოტომეტრი	ნარჩენი ქლორი	ისო 7393-2:1985	I
		ტიტრიმეტრია	კალციუმი	სსტ ისო 6058:2008	
		ტიტრიმეტრია	მაგნიუმი	სსტ ისო 6059:2008	
		ტურბიდიმეტრია	სულფატის განსაზღვრა	გოსტ 4389-78	I
		ტიტრიმეტრია	ქლორიდის განსაზღვრა	სსტ ისო 9297:2008	
		ტიტრიმეტრია	ჰიდროკარბონატის განსაზღვრა	გოსტ 23268.3-78	
		ექსტრაქცია და სპექტოფოტომეტრია	ფენოლი	EPA 420.1	I

		სპექტროფოტომეტრია	რკინა	EPA 8008	I
			ფორმალდეჰიდი	Hach Lang 200 Formaldehyde Test Kit, Model FM	I
			გლუტარალდეჰიდი	Hach, Glutaraldehyde Test Kit GT-1 (2587200)	
		მიკრობიოლოგიური მაჩვენებლები			
		ნიმუშის მომზადება, დათესვა, კულტივირება	მეზოფილური აერობებისა და ფაქულტატიური ანაერობების რაოდენობა	სსტ ისო 6222:2008	I
		ფილტრაცია	საერთო კოლიფორმული ბაქტერიები და E. Coli	მეთოდური მითითებები 4.2.1884-04	I
		ფილტრაცია	S. faecalis	სსტ ისო 7899-2:2007 მეთოდური მითითებები 4.2.1884-04	I
5	წიადაგი	პოტენციომეტრული მეთოდი	pH	სსტ ისო 10390 : 2011	I
		პოტენციომეტრული მეთოდი, (Soil Oxygen Meter)	გასხნილი ქანგბადი	ვალიდირებული მეთოდი DGL-IN 28-G-01	I
		პოტენციომეტრული მეთოდი	მარილიანობა	ისო 11265:1994	I

		პოტენციომეტრული მეთოდი, (UMP 1)	ტენიანობა	ისო 10573:1995	I
		მოცულობითი	სიმკვრივე	ისო 11272:2017	I
		გრავიმეტრია	გრანულომეტრია	სსტ ისო 11277: 2020	I
		სპექტროფოტომეტრია	ფოსფორის განსაზღვრა	ისო 11263-2016	I
6	წყალი სასმელი, წყაროს წყალი, ზედაპირული წყლები, ჩამდინარე წყალი	-	ნიმუშის აღება	ტექნიკური რეგლამენტი წყლის სინჯის აღების სანიტარული წესები (საქართველოს მთავრობის დადგენილება #26, 03.01.2014) სსტ ისო 19458 : 11 - წყლის ხარისხი. ნიმუშების აღება მიკრობიოლოგიური ანალიზისთვის	
7	ნიადაგი	-	ნიმუშის აღება	გარემოს ხარისხობრივი მდგომარეობის ნორმების დამტკიცების შესახებ ბრძანება №38/ნ 2003 წლის 24 თებერვალი. დასახლებული აღწილების ნიადაგის მდგომარეობის პიკეტუარი შეფასება	

					მეთოდური მითითება 2.1.7.003-02	
8	ჰაერი	-	ნიმუშის აღება	გოსტ 17.2.3.01-86. ბურების დაცვა. ატმოსფერო. დასახლებული პუნქტების ჰაერის ხარისხის კონტროლის წესები.		

საპ GAC



სსიპ „აკრედიტაციის ერთიანი ეროვნული ორგანო –
აკრედიტაციის ცენტრი“

აკრედიტაციის მოწმობა GAC-TL-0160

ადასტურებს, რომ

შპს „დგ კონსალტინგი“-ს
საგამოცდო ლაბორატორია

მდებარე: ქ. თბილისი, მ. გელოვანის #10

შეფასდა და აკმაყოფილებს ეროვნული სტანდარტის

სსტ ისო/იეკ 17025:2010-ის მოთხოვნებს

აკრედიტებულია შემდეგ სფეროში: 1. გარემო (საცხოვრებელი და სამუშაო გარემო ღია და დახურულ სივრცეებში); 2. ჰაერი; 3. წყალი - სასმელი (ბუტილირებული, წყალმომარაგების და ა.შ.); 4. წყალი ზედაპირული, ჩამდინარე; 5. ნიადაგი.
(იხ. დანართი „აკრედიტაციის სფერო“)

აკრედიტაციის ცენტრის
გენერალური დირექტორი

რეგისტრაციის თარიღი
15 აგვისტო 2017 წ.

ქალაქშია
15 აგვისტო 2021 წ.

საპ GAC



0186 თბილისი, აღ. ყაზბეგის ქ. 42ა

დამკვეთი: სსიპ „აკრედიტაციის ერთიანი ეროვნული ორგანო – აკრედიტაციის ცენტრი“
დამამზადებელი: შპს „სოლეი“. სფს-ს რეგისტრაციის № 06-3938

Laboratory of Excellence

DG Consulting Limited

*This laboratory has been recognized by ERA as a
Laboratory of Excellence for achieving 100% acceptable data in the*

May 2018 WP ERA Proficiency Testing Round 280

*which included 479 participating laboratories. This achievement is a demonstration of
the superior quality of this laboratory in evaluation of the analyte(s) listed below.*

n-Hexane Extractable Material(O&G)(Grav)




Matthew Seebeck, Quality Officer



Laboratory of Excellence

DG Consulting Limited

This laboratory has been recognized by ERA as a
Laboratory of Excellence for achieving 100% acceptable data in the

May 2018 WS ERA Proficiency Testing Round 262

which included 255 participating laboratories. This achievement is a demonstration of
the superior quality of this laboratory in evaluation of the analyte(s) listed below.

E.coli
Total Coliforms




Matthew Seebeck, Quality Officer



Certificate of Recognition

DG Consulting Limited

ERA congratulates this laboratory for successful completion of the

January 2018 WS ERA Proficiency Testing Round 258

We recognize the performance of this laboratory for achieving an acceptable evaluation for the analyte(s) listed below.

Chloride
Nitrate as N
Turbidity

Conductivity at 25°C
Sulfate



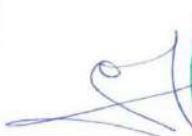
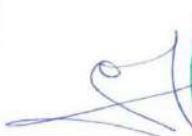
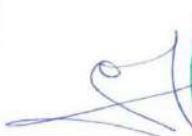
A handwritten signature in black ink, appearing to read 'Matthew Seebeck', written over a horizontal line.

Matthew Seebeck, Quality Officer



ხელშეკრულება საკონსულტაციო მომსახურებაზე თბილისი, საქართველო 26 ივნისი, 2021 წ
მხარეები
შპს ესდისსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17 მისი დირექტორის გიორგი გულიაშვილი-ს სახით (შემდგომში - დამკვეთი) და შპს DG Consulting (ს/კ 205 280 998) მისამართი: თბილისი, მირზა გელოვანის 10, წარმოდგენილი მისი უფლებამოსილი პირის, ბ-ნი დავით გირვჯლიანის სახით (შემდგომში "კონტრაქტორი") დამკვეთი და კონტრაქტორი ერთობლივად მოიხსენებიან როგორც მხარეები, ხოლო ცალ-ცალკე, როგორც მხარე.
1. ხელშეკრულების საგანი
E-60 მაგისტრალის F4 მონაკვეთზე (ქვედა წევა - არგვეთა ზესტაფონის შემოვლითი გზა) გარემოსდაცვითი მონიტორინგის სამუშაოების განხორციელება
2. შესასრულებელი სამუშაო
2.1. სამუშაო ითვალისწინებს შემსრულებლის მიერ პერიოდული (ყოველთვიური) გარემოსდაცვითი მონიტორინგის სამუშაოების წარმოებას დანართ 1-ში მოცემული ერთეული ღირებულებების შესაბამისად. სამუშაოები შესრულდება სტანდარტული მეთოდების გამოყენებით. მონიტორინგული სამუშაოები მოიცავს: 2.2. ატმოსფერული ჰაერის მონიტორინგს; 2.3. მტვრის კონცენტრაციების განსაზღვრას 2.4. ხმაურისა და ვიბრაციის დონეების განსაზღვრას 2.5. ნიადაგისა და წყლის ქიმიურ და მიკრობიოლოგიურ ანალიზს 2.6. მიმდინარე ხელშეკრულების შესაბამისად შესასრულებელი სამუშაოები დაზუსტდება ყოველთვიურად მონიტორინგული სამუშაოების საჭიროების და მშენებლობის ეტაპების მიხედვით.
3. ღირებულება და გადახდის პირობები
3.1. "კონტრაქტორის" მიერ გაწეული მომსახურების სრული ღირებულება გამოითვლება ყოველთვიურად ფაქტიურად შესრულებული სამუშაოს მიხედვით, დანართში 1 მოცემული ერთეული ღირებულებების გათვალისწინებით. ერთეული ღირებულებების ცხრილი არ მოიცავს დამატებული ღირებულების გადასახადს, რომელიც დაემატება თვის განმავლობაში შესრულებული სამუშაოს ჯამურ ღირებულებას. 3.2. ანაზღაურება მოხდება ყოველთვიურად, ანაზღაურების დაგვიანების შემთხვევაში, მომდევნო თვის სამუშაოები გადაიწევს. 3.3. შემსრულებლის მიერ ინვოისის წარდგენისას ასევე ელექტრონულად წარდგენილ უნდა იქნას ოფიციალური ანგარიშ ფაქტურა შემოსავლების სამსახურის ვებ-გვერდის (www.rs.ge) საშუალებით. 3.4. ანაზღაურება მოხდება ინვოისების წარდგენიდან 10 სამუშაო დღის ვადაში.

3.5. ხელშეკრულების ერთეული ფასები მოცემულია ლარში 2021 წლის ივნისისათვის არსებული ოფიციალური კურსის გათვალისწინებით იმ შემთხვევაში, თუ გაცვლითი კურსი შეიცვლება 20%-ზე მეტი სიდიდით, ერთეული ღირებულებებიც შეიცვლება ურთიერთმოლაპარაკების საფუძველზე.
4. მხარეთა ვალდებულებები 4.1. შემსრულებელი ვალდებულია: 4.1.1. გულისხმევრებითა და პასუხისმგებლობით შეასრულოს მასზე დაკისრებული მოვალეობები მისი კომპეტენციისა და კვალიფიკაციის გათვალისწინებით; 4.1.2. დაიცვას კონფიდენციალურობა ხელშეკრულების ძალაში ყოფნის მთელი ვადის განმავლობაში და ამ ვადის გასვლიდან 6 (ექვსი) თვის განმავლობაში. 4.2. დამკვეთი ვალდებულია: 4.2.1. დროულად მიაწოდოს კონტრაქტორს სრული ინფორმაცია სახელშეკრულებო ვალდებულებების ჯეროვანი შესრულებისთვის. 4.2.2. უზრუნველყოს შემსრულებლის ხელშეწყობა საველე სამუშაოების პროცესში. 4.2.3. უზრუნველყოს კონტრაქტორის მიერ წარდგენილი დოკუმენტაციის დროულად განხილვა და მიღება.
5. ხელშეკრულების მოქმედების ვადა 5.1. ხელშეკრულება ძალაში შედის მხარეთა მიერ მისი ხელმოწერის მომენტიდან და სრულ და ჯეროვანად შესრულებამდე. 5.2. ხელშეკრულება ითვალისწინებს დანართი 1-ით განსაზღვრული სამუშაოების შესრულებას 5.3. საჭიროების შემთხვევაში, მხარეები შეთანხმდებიან ხელშეკრულების გაგრძელებაზე ან ახალი ხელშეკრულების გაფორმებაზე.
6. ხელშეკრულების ვადამდე შეწყვეტა 6.1. ნებისმიერ მხარეს ყოველგვარი საფუძვლის გარეშე შეუძლია წინამდებარე ხელშეკრულების ვადის გასვლამდე შეწყვეტა მეორე მხარისთვის არა უგვიანეს ერთი თვით ადრე წერილობითი შეტყობინების გაგზავნით. 6.2. ხელშეკრულების შეწყვეტისას დამკვეთი აანაზღაურებს მხოლოდ კონტრაქტორის მიერ შეტყობინების მიღების თარიღისთვის შესრულებულ სამუშაოს. თუ ამ დროისათვის ანალიტიკური სამუშაოები განხორციელების პროცესშია, მაშინ, დამკვეთი ვალდებულია აანაზღაუროს აღნიშნული ანალიტიკური სამუშაო.
7. ინტელექტუალური საკუთრების უფლება 6.1. წინამდებარე ხელშეკრულების საფუძველზე, კონტრაქტორისათვის სრული ანაზღაურების განხორციელების შემდეგ, დამკვეთს გადაეცემა ინტელექტუალური საკუთრების უფლებები ხელშეკრულების ფარგლებში მომზადებულ ყველა მასალაზე.
8. მოქმედი სამართალი და დავების გადაწყვეტის წესი 8.1. წინამდებარე ხელშეკრულება შედგენილია და რეგულირდება ქართული სამართლის შესაბამისად.

8.2. მხარეთა შორის წარმოქმნილი სადავო საკითხები შესაძლებლობიდან გამომდინარე წყდება ურთიერთშეთანხმებითა და მოლაპარაკების გზით; 8.3. იმ შემთხვევაში, თუ კონსუსსი არ იქნება მიღწეული, დავა გადაწყდება სასამართლოს გზით საქართველოს კანონმდებლობის შესაბამისად.									
9. დასკვნითი დებულებები 8.1 ნებისმიერი გადახრა ან ცვლილება ამ ხელშეკრულების პირობებში დაიშვება მხოლოდ ორივე მხარის მიერ ხელმოწერილი წერილობითი შეთანხმების საფუძველზე. 8.2 ხელშეკრულება შედგენილია 2 ეგზემპლარად ქართულ ენაზე.									
10. საბანკო რეკვიზიტები <table border="1"> <thead> <tr> <th>„დამკვეთი“:</th> <th>„კონტრაქტორი“</th> </tr> </thead> <tbody> <tr> <td> შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17. სს "საქართველოს ბანკი" ანგარიში ნომერი: GE18BG000000365814743 </td> <td> შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10, მიმღები: შპს "დგ კონსალტინგი" მიმღების ბანკი თბილისი ბანკი ა/ანგარიში (ლარი) GE16TB0669136020100005 </td> </tr> </tbody> </table>		„დამკვეთი“:	„კონტრაქტორი“	შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17. სს "საქართველოს ბანკი" ანგარიში ნომერი: GE18BG000000365814743	შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10, მიმღები: შპს "დგ კონსალტინგი" მიმღების ბანკი თბილისი ბანკი ა/ანგარიში (ლარი) GE16TB0669136020100005				
„დამკვეთი“:	„კონტრაქტორი“								
შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17. სს "საქართველოს ბანკი" ანგარიში ნომერი: GE18BG000000365814743	შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10, მიმღები: შპს "დგ კონსალტინგი" მიმღების ბანკი თბილისი ბანკი ა/ანგარიში (ლარი) GE16TB0669136020100005								
მხარეთა ხელმოწერები <table border="1"> <thead> <tr> <th>„დამკვეთი“-ს სახელით:</th> <th>„კონტრაქტორი“-ს სახელით</th> </tr> </thead> <tbody> <tr> <td> შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17. </td> <td> შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10. </td> </tr> <tr> <td align="center">   </td> <td align="center">   </td> </tr> <tr> <td align="center"> დირექტორი - გიორგი გულიაშვილი </td> <td align="center"> დირექტორი - დავით გურგენიძე </td> </tr> </tbody> </table>		„დამკვეთი“-ს სახელით:	„კონტრაქტორი“-ს სახელით	შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17.	შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10.	 	 	დირექტორი - გიორგი გულიაშვილი	დირექტორი - დავით გურგენიძე
„დამკვეთი“-ს სახელით:	„კონტრაქტორი“-ს სახელით								
შპს ესდიესსი (SDSC) ს/ნ: 405335025 მისამართი: ქ. თბილისი, ვაკე-საბურთალოს რაიონი, მიხეილ თამარაშვილის გამზირი, #13, ბინა 17.	შპს DG Consulting, ს/კ 205 280 998 მისამართი: თბილისი, მირზა გელოვანის 10.								
 	 								
დირექტორი - გიორგი გულიაშვილი	დირექტორი - დავით გურგენიძე								
დამატებითი დოკუმენტები - დანართი 1									

Annex 3: Sample Attendance Sheet



TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

თარიღი/DATE: 18.12.2024

ადგილმდებარეობა E60 EWH F4: Interchange № 1; RoW pk 3+20 to pk 6+20 Interchange № 2

位置: E60 EWH F4:

TRAINING TUTOR:

ტრენერი:

David Kurdadze

培训讲师

SUBJECT:

საკითხი:

主题:

MMP Clean up and removal of all type of waste
Prior to fill up the diversion gasons and Road Sids

	სახელი და გვარი NAME 名称	კომპანია NAME OF EMPLOYER 公司	პოზიცია position 职位	ხელმოწერა Signature 签名
1	მ. სიხიშვილი სერგო	G.H.E.C.	Loader Operator	ს. სიხიშვილი
2	ლ. სიხიშვილი გ. მ. მ. მ.	" — "	Exc. Operator	ლ. სიხიშვილი
3	მ. სიხიშვილი დავით	" — "	Loader Operator	მ. სიხიშვილი
4	მ. სიხიშვილი ვ. მ. მ.	" — "	Exc. Operator	მ. სიხიშვილი
5	ს. სიხიშვილი გ. მ. მ.	" — "	Dump Truck Driver	ს. სიხიშვილი
6	მ. სიხიშვილი გ. მ. მ.	" — "	Loader Operator	მ. სიხიშვილი
7	მ. სიხიშვილი ი. მ. მ.	" — "	Mixer Operator	მ. სიხიშვილი
8	მ. სიხიშვილი ვ. მ. მ.	" — "	" — "	მ. სიხიშვილი
9	მ. სიხიშვილი გ. მ. მ.	" — "	" — "	მ. სიხიშვილი
10	მ. სიხიშვილი გ. მ. მ.	" — "	" — "	მ. სიხიშვილი
11				
12				
13				
14				

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

თარიღი/DATE: 22.10.2024

ადგილმდებარეობა E60 EWH F4: Interchange № 1; RoW pk 3+20 to pk 6+20 Interchange № 2

位置: E60 EWH F4:

TRAINING TUTOR:

ტრენერი:

David Kurdadze

培训讲师

SUBJECT:

საკითხი:

主题:

Concrete Batching Plant operation and concrete
about pits PPMP: WMP

	სახელი და გვარი NAME 名称	კომპანია NAME OF EMPLOYER 公司	პოზიციის position 职位	ხელმოწერა Signature 签名
1	მ.წიშვილი სერგო	G.H.E.C.	Loader Operator	ს.წიშვილი
2	ლ.საყვარელიძე	" — "	Exc. Operator	ლ.საყვარელიძე
3	მ.საყვარელიძე	" — "	Loader Operator	მ.საყვარელიძე
4	მ.საყვარელიძე	" — "	Exc. Operator	მ.საყვარელიძე
5	ს.საყვარელიძე	" — "	Dump Truck Driver	ს.საყვარელიძე
6	მ.საყვარელიძე	" — "	Loader Operator	მ.საყვარელიძე
7	მ.საყვარელიძე	" — "	Mixer Operator	მ.საყვარელიძე
8	მ.საყვარელიძე	" — "	" — "	მ.საყვარელიძე
9	მ.საყვარელიძე	" — "	" — "	მ.საყვარელიძე
10	მ.საყვარელიძე	" — "	" — "	მ.საყვარელიძე
11				
12				
13				
14				

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

DATE: 15.10.2024

ადგილმდებარეობა E60 EWH F4: Interchange № 2; Mechanical Workshops; Steel mounting workshop

位置: E60 EWH F4:

TRAINING TUTOR:

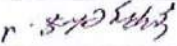
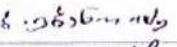
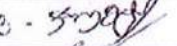
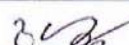
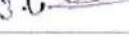
ტრენერი: _____ David Kurdadze _____

培训讲师

SUBJECT:

საკითხი: WMP; Hazardous and Non-Hazardous Waste Handling, Segregation and Storage

主题:

	სახელი და გვარი NAME 名称	კომპანია NAME OF EMPLOYER 公司	ხელმოწერა Signature 签名
1	ქუჩიძე მამუკა	GHEC	
2	ქუჩიძე ვახტანგ	GHEC	
3	სოფია ჯუღაშვილი	GHEC	
4	ბუხიძე დიმიტრი	GHEC	
5	გოგიშვილი	GHEC	
6	სვიტი ლევან	GHEC	
7	გუჩუა სოსო	GHEC	
8	სიბუა სოსო	GHEC	
9	ბუხიძე გიორგი	GHEC	
10	მუჯირი მამუკა	GHEC	
11	ხიფი სოსო	GHEC	
12	გიორგი ბუხიძე	GHEC	
13			
14			
15			
16			

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

თარიღი/DATE/日期: 17.09.2024

ადგილმდებარეობა E60 EWH F4:

位置: E60 EWH F4

TRAINING TUTOR:

ტრენერი:

David Kurdadze

培训讲师:

SUBJECT: Topsoil Management Plan: WMP; Waste removal and housekeeping before distribution and ling of topsoil.

საკითხი: and Re-Cultivation Plan, PPMP; Dust monitoring and control

主题:

	სახელი და გვარი NAME 名称	კომპანიის NAME OF EMPLOYER 公司	პოზიციის position 职位	ხელმოწერა Signature 签名
1	ვაჟა პატხაშვილი	CHEC	ხელმძღვანელის დახმარება	ვ. პატხაშვილი
2	თეიმურაზი ტყეშელაშვილი	CHEC	მენეჯერი	თ. ტყეშელაშვილი
3	გიორგი ჯაფარიძე	CHEC	მენეჯერი	გ. ჯაფარიძე
4	კახაბერი ჯაფარიძე	CHEC	მენეჯერი	კ. ჯაფარიძე
5	გიორგი მუხომბიძე	CHEC	დახმარების მენეჯერი	გ. მუხომბიძე
6	ნოდარ ფილიპოვი	check	საიტის მენეჯერი	ნ. ფილიპოვი
7	გიორგი ფილიპოვი	check	მენეჯერი	გ. ფილიპოვი
8	გიორგი მანუჩიძე	CHEC	მენეჯერი	გ. მანუჩიძე
9	ლევან მანუჩიძე	CHEC	მენეჯერი	ლ. მანუჩიძე
10	გიორგი მანუჩიძე	CHEC	მენეჯერი	გ. მანუჩიძე
11	გიორგი მანუჩიძე	CHEC	მენეჯერი	გ. მანუჩიძე
12	ანდრეი მანუჩიძე	CHEC	მენეჯერი	ანდრეი მანუჩიძე
13	მანუჩიძე	CHEC	მენეჯერი	მანუჩიძე
14	მანუჩიძე	CHEC	მენეჯერი	მანუჩიძე
15	მანუჩიძე	CHEC	მენეჯერი	მანუჩიძე
16	მანუჩიძე	CHEC	მენეჯერი	მანუჩიძე

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

თარიღი/DATE/日期: 16.08.2024

ადგილმდებარეობა E60 EWH F4:

位置: E60 EWH F4

TRAINING TUTOR:

ტრენერი:

David Kurdadze

培训讲师:

SUBJECT:

საკითხი:

主题:

WMP: Hazardous waste segregation
Non-Hazardous waste storage

	სახელი და გვარი NAME 名称	კომპანია NAME OF EMPLOYER 公司	პოზიცია position 职位	ხელმოწერა Signature 签名
1	იური დანძი	GHEC	დამმსახი	დ.დ.
2	ეკატი ვაშაძე	GHEC	დამმსახი	ე.ვ.
3	ნორი ვაშაძე	GHEC	დამმსახი	ნ.ვ.
4	ბიძინა დანძი	GHEC	დამმსახი	ბ.დ.
5	ვახტანგ ვაშაძე	GHEC	დამმსახი	ვ.ვ.
6	ნეკი ცუბუაშვილი	GHEC	დამმსახი	ნ.ც.
7	ბუჩუკი სუხუაშვილი	GHEC	მედიკოსი	ბ.ს.
8	ნეკი. დანძი	GHEC	დამმსახი	ნ.დ.
9	ნეკი. დანძი	GHEC	დამმსახი	ნ.დ.
10	მედიკოსი	GHEC	მედიკოსი	მ.მ.
11	ნეკი. დანძი	GHEC	დამმსახი	ნ.დ.
12	ნეკი. დანძი	GHEC	დამმსახი	ნ.დ.
13				
14				
15				

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4:

DATE: 02.07.2024

ადგილმდებარეობა E60 EWH F4: Interchange № 3; RoW pk 10+000 to pk 14+750 Interchange № 4

位置: E60 EWH F4:

TRAINING TUTOR:

ტრენერი:

David Kurdadze

培训讲师

SUBJECT:

საკითხი: Topsoil Management Plan; WMP; Waste removal and housekeeping before distribution and ling of topsoil

主题:

	სახელი და გვარი NAME 名称	კომპანია NAME OF EMPLOYER 公司	პოზიცია position 职位	ხელმოწერა Signature 签名
1	მ. / შიშველი სესი	G.H.E.C.	Loader Operator	მ. შიშველი
2	სახიკაძე გენაძე	" — "	Exc. Operator	სახიკაძე
3	ბიხვაძე დავით	" — "	Loader Operator	ბიხვაძე
4	შვდიაძე გიორგი	" — "	Exc. Operator	შვდიაძე
5	სოფოშვილი გიორგი	" — "	Dump Truck Driver	ს. სოფოშვილი
6	თეგვაზი გიორგი	" — "	Loader Operator	გ. თეგვაზი
7	ბესიძე გიორგი	" — "	Mixer Operator	ბესიძე
8	შახაძე კონსტანტინე	" — "	" — "	შახაძე
9	გვრიშვილი გიორგი	" — "	" — "	გ. გვრიშვილი
10	განუშვილი გიორგი	" — "	" — "	გ. განუშვილი
11	ქალაშვილი გიორგი	G.H.E.C.	Mixer Operator	ქალაშვილი
12	ქალაშვილი გიორგი	" — "	Dump Truck Driver	ქალაშვილი
13	ხიფიძეშვილი ივანე	" — "	" — "	ხიფიძეშვილი
14	შვდიაძე ჯანა	" — "	" — "	შვდიაძე
15	გვრიშვილი გიორგი	" — "	" — "	გ. გვრიშვილი
16	განუშვილი კონსტანტინე	" — "	Dump Truck Driver	გ. განუშვილი

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

Annex 4: Complaints Log for Reporting Period

#	Project	Recipient	Date Received	Social Media	Name & contact of Complainant	Complaint Category	Complaint Description	Resolution Description	Resolution	Resolution Date	Subcategorized	Status	Days open	Comments	
220	F4	RD	12.07.2024	Social	Residents of Zaka Gachochladze street, Zestafoni	Restriction or loss of access	The complainants, namely the citizens residing in Zaka Gachochladze street in Zestafoni state that the construction of the Interchange 2 has resulted in isolation and removal of their sewer adjacent to Chikoladze street which has a very poor infrastructure and needs urgent upgrade.They request to study the issue and respond to them.		Under review		Tech.hold	Tech.hold			
221	F4	RD	05.08.2024	Social	Pere Gorkaduri PIN 1800100486	Damage to infrastructure/assets	The Complainant states that his private property (residential house and ancillary structures) have been adversely affected by the Project construction works, which could be evidenced with the equipped wall cracks and the damaged plaster mortar applied to the house walls by SOGC Ltd, hired by the Contractor, which have fallen down. According to the Complainant, the construction	The Engineer has informed the Employer in writing as follows: 1) Damage to the Residential House We would like to inform you the following: The horizontal distance between the residential house of Pere Gorkaduri and Tunnel 4005 is about 82 meters. Whereas, between the mentioned residential house and the Gori-Safikhere Chikoladze Zestafoni railway road is about 10 meters. (See Attachment N2.). The technical condition survey of the residential house and crack marking with tapes was implemented on 15 th May 2021 by the company SOGC LTD (ID: 405230525), hired by the Contractor. The survey results are indicated in Attachment N1. Additionally, on September 07, 2021, the company SOGC LTD, hired by the Contractor, marked several cracks of the walls of the residential house with plasters. The Engineer's visual inspections implemented on October 10, 2024, revealed that, out of tapes and plasters provided by the company SOGC LTD, four tapes were cracked and one plaster was partially	Forwarded to RD		Tech.hold	Tech.hold			
222	F4	RD	26.08.2024	Social	Kaisha Shavgulidze (PIN: 18001006736)	Damage to infrastructure/assets	The Complainant states that he owns land agricultural land plot (CNC: 32.03.46.168) located in Ninosvili street, village Zaka Salava (Zestafoni), adjacent to the land plot (CNC: 32.03.46.167), which had been expropriated by the government. The land plot (CNC: 32.03.46.168) was expropriated with a concrete plinth and was designed for burial purposes (cemetery). During the construction	The Engineer has informed the Employer in writing (Letter N2791) that both 2023 and 2024, the Engineer has forwarded to the Contractor his observations/comments pertinent to the Contractor's submission of project documentation regarding Tunnel #6 Open Cut Variation, Local Road N414, Bridge N4108 and the access/egress roads on both ends of the above bridge. In particular, the Engineer pointed out that due to the widening of the above Bridge N4108 alignment, the access/egress roads on both ends of the bridge were falling beyond the Right of Way and were found to be encroaching on private lands. Hence, the Contractor was required to identify the part of land plots occupied by the above access/egress roads and to inform the Road Department for acquisition (please refer to the Engineer's letters: Ref (1), Clause 4 and Ref (3), Clause 2. Respectably, the Contractor has not taken into consideration the above Engineer's comments and instructions in the construction of Bridge N4108.	Forwarded to RD		Pending	Open			
223	F4	RD	26.08.2024	Social	Tamari Gachochladze (PIN: 18001006754)	Damage to infrastructure/assets	The Complainant states that Project construction works (tunnel blasting) carried out at around 100-150 m from her apartment have inflicted damage to her private property, the walls and the open balcony of which developed cracks, and there exists a risk that the entire wall might collapse, and that she has not received any verbal or written explanation from supervisory experts as to how safe it is to stay in the house. She requests that the city hall intercede to the RD, in order to provide her with data on technical condition of her private property.	The Engineer has informed the Employer in writing as follows: The horizontal distance between the apartment and the Tunnel 4003 TA portal is approximately 127.10 m. The apartment is located on the 3rd floor of a 5-story residential building on the right bank of Nisra river, in Shorapani township. Furthermore, on October 10, 2024, the Engineer conducted a visual evaluation of the apartment as witnessed by the proprietor. The proprietor said that only minor damages could be observed to the balcony walls before the start of the Project construction activities, which have been incorporated in the pre-construction building/structure survey report. As for now, the crack observed between the balcony wall and the floor has been enlarged. As a result, the wall, which had the windows earlier, is vibrating. Hence there is a risk that the entire wall may collapse. 3 (three) gypsum tapes had been applied to the wall during the pre-construction survey of the apartment, of which 1 (one) tape is missing (previously), probably due to the improperly treated surface, while the remaining 2 (two) tapes remain intact (undamaged). Please note that post-construction building/structure examination has also been implemented in the apartment, and the proprietor is looking forward to get the results. Considering the aforementioned, the Engineer deems less likely that the damages observed in the apartment could have been caused by the impact of the Shorapani – Argveta Section F4 (RD0 Highway Route) project construction works (Tunnel 4003 blasting works). However, we think it more reasonable to wait for the post-construction survey report, on the basis of which we could receive a more detailed and thorough picture.	Forwarded to RD		Tech.hold	Tech.hold			
224	F4	RD	12.08.2024	Social	Davit Khigvadze (PIN:18001003473), Ushangi Shavgulidze (PIN:1800100631)	Damage to infrastructure/assets	The Complainants state that the technical condition of their residential houses, located adjacent to Ninosvili street (Zestafoni), have been under risk due to the Projects construction works both during and following their completion, though there have been no reaction toward the problem from the authorities, as far, despite multiple appeals from the complainant's side. As	The Engineer has informed the Employer in writing (Letter N1726) as follows: On August 5, 2024, the Contractor was approached with a verbal complaint (via phone) by the owner of the residential house (CNC: 32.03.33.709) Davit Khigvadze, who informed the Contractor that the strong vibrations, generated in the course of the local road construction works carried out in the vicinity of his residential house, had caused damage to the house, specifically falling of the ceramic tile from the house's kitchen wall. On August 5, at the commission of the Contractor, with the aim of determining the vibration level at the residential house, vibration monitoring was conducted close to the external wall of the house under the simulated maximum operation conditions of 1 (one) unit of a compactor equipment used in the construction works. As per the vibration monitoring report (see attached herewith), the vibration level value significantly exceeds the maximum limit, as compared to the standards prescribed under the Georgian law (by 9.6 dB). As to the residential house of Davit Khigvadze, that is it is located even farther	Forwarded to RD		Subcategorized	Closed			
225	F4	RD	15.08.2024	Social	Iuli Abashvili (1800100658) et al	Restriction or loss of access	According to the Complainant's statement, they own agricultural land plots (CNC: 32.03.46.762, 32.03.46.594, 32.03.46.551, 32.03.46.558, 32.03.46.194, 32.03.46.341, 32.03.46.343 in village Argveta (Zestafoni municipality), in which they cultivated plants in accordance with agricultural crops. Though now they use the land plots only for grazing purposes, as they have lost access	The Engineer has informed the Employer with the letter N2811-CSA69564-UBH-SG as follows: it has been revealed by the visual site survey, conducted by the Engineer's representatives on September 17, 2024, the pre-existing access road to the above land plots has been cancelled due to the Project highway construction, and, regrettably, it is not possible to restore it. Nevertheless, it is possible to arrange an alternative access road as per the attached plan, which has been communicated to and agreed with the landowner's representative, respectively. You are kindly requested to review the submitted alternative access road arrangement plan and grant to us your permission, so that the Engineer could instruct the Contractor to arrange the alternative access road to the above land plots in accordance with the attached plan. Based on the Employer's letter N2-06/N204, which stated no objection that the alternative access road be arranged in accordance with the proposed Location Plan, the Contractor was instructed with Letter N2817 to prepare and submit a	Forwarded to CC		Pending	Open			
226	F4	RD	24.09.2024	Social	Tamuna Tsutsuadze (PIN: 18001031716) Amiran Tsutsuadze (PIN: 18001010710) Vakhtang Tsutsuadze (PIN:18001041750) V. Batoniashvili street, Decentral 1, Zestafoni city	Other	The Complainants state that the water level at their groundwater wells located in their home area (land plot) has significantly decreased and is on the verge of complete drying due to the Project construction works (tunnel blasting). They request that the technical condition of their groundwater wells be examined and an alternative supply source be provided to them. In addition, in their letter enclosed to the RD letter and addressed to the Contractor and Engineer, Vice Mayor of Zestafoni municipality city hall	requests the addressees to assist the participants with a water	Under review		Pending	Open			
227	F4	RD	17.10.2024	Social	Davit Gachochladze, Zestafoni Municipality Mayor's representative in village Sani-shani administrative unit	Restriction or loss of access	The Complainant states that the pedestrian access track to the pedestrian bridge on street Chikoladze located in village Sagvile (Tumashvili community) has been damaged as a result of depositing of crushed stone and gravel material when arranging by the Contractor of the above access track at the site of the bridge rehabilitation work, having resulted in restriction of access for the citizens to the bridge. The Complainant requests the RD to instruct the Contractor to restore the access.	The Engineer has informed the Employer in writing (Letter N1623) that rehabilitation of the damaged access road has been implemented by the Contractor, specifically the inert material dumped on the road during the project construction works has been removed, and concrete slabs with metal reinforcement have been arranged (please see the attached photos), which enables the local community members to walk to the bridge without any restriction.	Forwarded to RD		Subcategorized	Closed			
228	F4	RD	24.10.2024	Social	Martina Anabidze PIN: 18001007303, Tamaris Sartane street N19 (CNC:32.04.416 Mab hc: 551361100 PI: 76-00	Damage to infrastructure/assets	According to the Complainant's written statement, who had approached the Contractor on multiple occasions informing them that her own residential house, located within the Project highway construction area had developed cracks and been affected by vibration due to the project tunnel blasting works. She also informed the Contractor of her intention to use the house for residential purposes (her permanent residence is in Tbilisi), and asked that adequate remedial actions be implemented. Subsequently the entire house was destroyed on September 27, 2024, and as a result she has sustained financial and moral	The aforementioned residential house had been an old, amortized structure which was in the condition of disrepair. The structure has been abandoned and not used for human dwelling for a long time. The horizontal distance between the above-mentioned house and Tunnel 4005 is about 258 meters. The Engineer has informed the Employer in writing (Letter N2184) as follows: "On 10th September, 2021, pre-construction technical condition survey of the house was carried out by the company SOGC LTD (ID: 405230525), hired by the Contractor (see the Engineer's Ref (8) letter). On 23rd June, 2023, visual inspection of the house was carried out by the Engineer, during which no significant deterioration of the technical condition of the house had been observed as compared to the survey results provided by the company SOGC LTD. On 4th December, 2024, another visual inspection of the house was carried out by the Engineer, which found that the house had been dismantled, as evidenced by the dismantled parts of the remaining structure stockpiled on location (brick, block, timber, etc.). As you are aware, for the construction of Tunnel 4005, excavation works have been carried out both with the use of the blasting method, as well as the mechanical excavation method. The Contractor submitted the blasting vibration monitoring reports of Tunnel 4005 to the Engineer and the Employer with Ref (161, 163, 164, 165, 166, 167, 168, 169, 170 & 171) letters, according to which the exceedance to the Safety Vibration Speed Standard (2.5 mm/s) defined within the Project was recorded only on 24th May, 2022, due to the blasting work conducted in the section from PK72+78.2 to PK72+80.42 of Tunnel 4005-TA. However, in this case, the exceedance to the Safety Vibration Speed Standard (2.5 mm/s) was recorded at 168 meters from the mentioned blasting point. Also, as a	Forwarded to RD		Subcategorized	Closed			
229	F4	RD	28.11.2024	Social	Archil Katsamadze, PIN:18001034516, village Kivda Savara (CNC:32.03.47.776)	Damage to infrastructure/assets	The complainant states that his own agricultural land plot has been damaged (flooded), due to the arrangement of a new drainage channel between his land plot and the Project highway. Specifically, the drainage channel could not handle a high quantity of atmospheric precipitation falling in October, 2024, which resulted in overflow and flooding of the complainant's land plot and creating an impassable layer of sludge inside the land plot due to which the complainant was unable to harvest the maize crop from		Under review		Pending	Open			
240	F4	RD	11.12.2024	Social	Simon Gopirashvili, village Kivda Savara (PIN:1800104603; CNC: 32.03.49.087; Phone number: 555159434	Damage to infrastructure/assets	According to the complainant's statement he owns an agricultural land plot in village Kivda Savara (CNC:32.03.49.087) which he has been cultivated and harvesting crops. However the water seepage flowing in the ditch adjacent to his land plot has caused erosion and damage to his property. He requests that the existing drainage ditch be improved in order to stop the erosion and render his property useful for its purposes.		Under review		Pending	Open			
241	F4	RD	18.12.2024	Social	Martina Magveladze's and neighboring households EC: 18001035310 Mab hc: 577 30 01 56 (PIN: 47+00)	Restriction or loss of access	According to the written statement of Zestafoni municipality mayor, pedestrian access has been restricted to Project Highway for Martina Magveladze's household and her neighborhood due to the installation of wire mesh fence along the project highway by the Contractor. The request is to arrange a small gate or an overpass on the fence so that the above community members could walk to and access the highway without any restriction.	The Engineer informed the Employer in writing (Letter N-----) that in the Engineer's opinion, the arrangement of any kind of entrance gate into or of a handdrilled railway over the wire mesh fence at the location, so that citizen Martina Magveladze's household and her neighborhood were able to walk to/from and to reach the project highway without any restriction, as it is required by the Zestafoni municipality city hall's letter (N22-22242515), is not advisable due to the risks associated to the community and the road and traffic safety. Local people residing in the said location can have pedestrian or vehicular access to the project highway via Interchange 2, as it is provided for under the project.	Forwarded to RD		Pending	Open			

Annex 5: NCR Regarding the wastewater from Batching Plant

 MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES OF GEORGIA საზოგადოებრივი სარგებლობის სამსახური		 ULUSLARARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S.			
NON CONFORMANCE REPORT (NCR)				No	41
Construction of the E60 Highway F4 Shorapani - Argveta Project SARP/CS/QCBS-01					
Location :	Batching Plant No: 2 / Interchange No:2	Section/Km :			
Tech. Spc. Item :		Description :	Untreated wastewater discharge from the batching plant		
Ref. Criteria :	N/A	Ref. No. :	N/A		
Description of Non-conformance:	Settling ponds, originally designed to treat wastewater from the concrete batching plant, have been completely removed due to the construction of the access road. This total elimination of the primary treatment system has resulted in the direct discharge of untreated wastewater from the concrete plant into the Borimela River. This action is in violation of the Environmental Impact Assessment (EIA) report, Georgian law, and Asian Development Bank (ADB) environmental safeguards.				
Site Responsible that Cause Incompliance	David Kurdadze				
Category	☐ Minor Non-Conformance (Reporting shall be done for information and remedial action implemented) ☒ Major Non-Conformance (Remedial action to be implemented after Engineer's written acceptance for CAR)				
Disposition	☐ Use-As ☐ Repair ☐ Rework ☐ Improve ☐ Remove ☐ Reconstruct ☐ Reject				
Progress	☐ Not Allowed ☒ Allowed ☐ After Acceptance of CAR ☐ After Close of CAR				
Disposition Proposal:	Cessation of all untreated wastewater discharge into the Borimela River is imperative. A comprehensive environmental impact assessment must be conducted to determine the extent of damage to the river ecosystem. Temporary settling ponds must be reconstructed or an alternative wastewater treatment system within a specified timeframe should be established.				
Picture, Sketch					
Attachment :					
Section	Name	Title	Date:	Signature:	
Engineer	Emre Duran	Environmental Expert	15.08.2024		
Engineer Team Leader	Alper Ataç	Team Leader	15.08.2024		

Contractor's Ref. 20240925-1898-GHEC-UBM

Date: 25 September, 2024

To: **Mr. Alper Atack**, Acting Team Leader
UBM ULUSLARARASI BİRLEŞMİŞ MÜŞAVİRLER MÜŞAVİRLİK HİZMETLERİ A.Ş.

CC: **Mr. Levan Kupatashvili**, Deputy Chairman
Ministry of Regional Development and Infrastructure of Georgia-Roads Department of Georgia

Project: Construction of E60 Tbilisi – Senaki - Leselidze Highway, Lot F4 Shorapani -Argveta Section

Subject: NCR – 41 Untreated Wastewater Discharge from the CBP- 1 in to the Borimela River
Contractors corrective action report CAR – № 7

Dear Sir,

In reference to the Engineer's Non-Conformance Report NCR – № 41, about Untreated Wastewater Discharge from the CBP- 1 in to the Borimela River, please see the attached Contractor's Corrective Action Report CAR – № 7

Sincerely,

Contractor Representative

Chen Yuqiang

Attachment:

1. Contractor's Corrective Action Report CAR – № 7
2. Training Attendance Sheet
3. Photo Evidence

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint

 ROADS DEPARTMENT OF GEORGIA		 UBM UNIVERSAL BUILDING MATERIALS MANUFACTURING COMPANY LIMITED		 	
CORRECTIVE ACTION REQUEST (CAR)					
Construction of E60 Highway F4 Shorapani-Argveta Project SARP/CS/QCBS-01					
CAR No:	7	Issue Date:	15-08-24	Related NCR No:	41
Location :	Batching Plant № 1	Section/Km:	E60 EWH F4 Section pk 32+00		
Tech. Spc. Item:		Description:	Untreated Wastewater Discharge from the CBP- 1 (Concrete Batching Plant № 1)		
Ref. Criteria :	N/A	Ref. No:	EIA. Waste Water Management and Concrete Batching Plants table: 139		
Description of Deficiency:					
The Contractor has being made Untreated Wastewater Discharge the receiving environment, - in to the Borimela River and Forestry area directly					
Cause of Deficiency:					
The cause for the non-conformity of EIA, Waste Water Management and Concrete Batching Plants, arose from the fact that the construction of the Vachevi village access road of the E60 highway coincided exactly on the area that existing sediment pits where they were located.					
Method of Corrective Action:					
As a corrective action The Contractor has:					
1) Conduct awareness of the Pollution prevention and wastewater management requirements to all concrete mixer truck drivers (Please see Attendance sheet).					
2) In order to ensure that the waste water generated during the process does not go beyond or is contained in the work site, the contractor has arranged a water containment drainage around the work site, which will flow through sedimentation traps and sediment purification filters into the environment. (Please see photo).					
  					
Prepared by Contractor	David Kurdadze	Approved by Engineer	Mary Kechkhushvili		
Date:	25.09.2024	Date:			
Signature:		Signature:			
Evaluation of Corrective Action: Acceptable ☐ Unacceptable ☐					
Contractor	Du Jun	Engineer	Emre Duran		
Date:	25.09.2024	Date:			
Signature:		Signature:			
Above Corrective Action has been implemented and verified and this CAR has been closed out					
Supervision Team Leader:	Name, Surname:	Date:	Signature:		

TRAINING ATTENDANCE/დასწრების ფორმა/培训签到表

LOCATION: E60 EWH F4: ___ გზაგამტარი № 1; ბეტონის ქარხანა № 1 ___ DATE: 24.09.2024

ადგილმდებარეობა E60 EWH F4: ___ INTERCHANGE № 1; CONCRETE BATCHING PLANT № 1 ___

位置: E60 EWH F4: ___ 1号立交; 1号混凝土搅拌站 ___

TRAINING TUTOR:

ტრენერი: ___ DAVID KURDADZE ___

培训讲师

SUBJECT: ___ WMP; PPMP; წყლის გამოყენების მენეჯმენტი; ბეტონის გამრეცხი ორმო; ბეტონ შემრევი სატვირთო მანქანების რეცხვის პროცედურა ___

საკითხი: ___ WMP; PPMP; USED WATER MANAGEMENT; CONCRETE WASHOUT PIT; CONCRETE MIXER TRUCKS WASHING PROCEDURE ___

主题: ___ WMP; PPMP; 废水管理; 混凝土冲洗坑; 混凝土搅拌车清洗程序

No	First and Last name	Position	Signature
1	ბესიკი ხვეიშვიდი	მძღოლი	ბ. ხვეიშვიდი
2	ნვინო ლომიძე	ოპერატორი	ნ. ლომიძე
3	ალექსანდრე ჯიქუაძე	მძღოლი	ა. ჯიქუაძე
4	მამუკა შავიძე	მძღოლი	მ. შავიძე
5	ლევან მამუკაძე	მძღოლი	ლ. მამუკაძე
6	გიორგი მამუკაძე	მძღოლი	გ. მამუკაძე
7	ბესიკი ჯანაშვილი	მძღოლი	ბ. ჯანაშვილი
8	Genadi Bakhtidze	Site Supervisor	გ. ბახტიძე
9			
10			
11			
12			
13			
14			
15			

Guizhou Highway Engineering Group Co Ltd and China National Technical Import & Export Corporation Joint













Attention to:

Chen Yuqiang (Contractor's Representative)

Guizhou Highway Eng.Group Co. & China National Technical import & Export Coop. JV

Subject: Untreated wastewater Discharge from the CBP-1 in to the Borimela River Contractor's
Corrective Action Report CAR

Our Reference:

Date:

References:

(1) Contractor's Letter 20240925-1898-GHEC-UBM

Dated: 25.09.2024

Dear Sir,

In the Construction of Shorapani - Argveta Section F4 (E60 Highway Route); with reference to your letter dated 25 September 2024 regarding the Non-Conformance Report (NCR) No. 41 - Untreated Wastewater Discharge from the CBP-1 into the Borimela River and the subsequent Corrective Action Report (CAR-N7), the Engineer has reviewed the submitted documents.

While the CAR-N7 provides corrective actions to resolve the Non-Conformance, the Engineer's recent site inspections have revealed that the current conditions do not reflect the full implementation of the proposed corrective actions. Specifically, the discharge from the cement batching plant continues to persist, indicating that the issue remains unresolved.

The Contractor is instructed to re-submit a revised CAR-N7 that addresses the ongoing discharge issue and outlines additional corrective actions to allow for further review and potential closure of the NCR.

Sincerely,
Alper Ataç
Team Leader

JV UBM ULUSLARARASI AND SMEC INTL PTY LTD

Construction Supervision Consultant for the
E60 Highway F4 Shorapani - Argveta Project

For Action:

Chen Yuqiang (Contractor's Representative)

Guizhou Highway Eng.Group Co. & China National Technical import & Export Coop. JV

For Information

Mrs Salome Tsurtsumia (Deputy Chairman)

Ministry of Regional Development and Infrastructure of Georgia-Roads Department of Georgia

UBM ULUSLARARASI BİRLEŞMİŞ MÜŞAVİRLER MÜŞAVİRLİK HİZMETLERİ A.Ş.

Head Quarter: Reşit Galip Cad. No:94 Çankaya / ANKARA Phone: +90312 427 65 65 Fax: +90312 427 65 76

Georgian Branch: Apakidze 11, Room 501 Tbilisi/ GEORGIA

1